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Preface

This book is unlike any other books on environmental compliance. It is not a recitation of environmental regulations.

Knowledge of environmental regulations is important in ensuring compliance. However, there are many other skills and knowledge that a successful environmental manager ought to have as well.

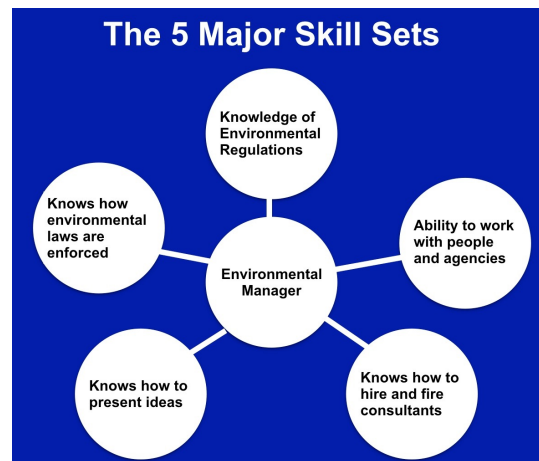


For example, it is important for an environmental manager to communicate effectively to colleagues at work or at conferences. This book includes a chapter on how to make excellent PowerPoint presentations. It will also help you in presenting your ideas to management.

It is critical for an environmental manager to understand how senior management sees its role. There is a chapter on that based on my years as a senior corporate environmental manager in a Fortune 500 company.

From the standpoint of enforcement and liability, it is paramount that we understand the criteria the government uses to select targets for criminal prosecution. There is ample discussion of this topic throughout the book.

Your ability as an environmental manager to work with your colleagues in the office, plant manager, attorneys, consultants and government agency officials is also critical to your success. This book has several chapters addressing this issue.



There is a chapter in this book on how to select the right consultants to assist you in complying with regulations. Picking the wrong consultant who has the wrong temperament can be catastrophic.

Much of the material in this book is taken from my 2-day environmental compliance seminars where I spoke to over 3000 environmental professionals about PRACTICAL ways to stay in compliance.

I have included many real-life examples in this book that are based on my 40 years of experience in the corporate world and as an environmental consultant.

The book is written in conversational tone and is very easy to follow. As you read this book, I hope you feel that I am speaking to you directly. And I am.

One final note. Please feel free to contact me at norman@proactenv.com any time if you have any questions or you just feel like chatting with me about what you do.

Enjoy the book!

Norman Wei

Introduction

The focus of this book is on the skills required of an environmental manager.

The first chapter of this book lays out how senior management views the role of an environmental manager vis-a-vis that of a safety manager. It is not that senior management views environmental protection any less than safety. It is all in how “effectiveness” and “return on investment” are often perceived by management.

Chapter 2 discusses how you as an environmental manager should work with your colleagues in the office as well as attorneys and plant managers. Your relationship with these folks dictates your effectiveness as an environmental manager.

The third chapter is about your working relationship with the regulatory agencies. How you or your consultants interact with them is paramount to your success. This is because people generally work with people they like. Permit writers are no exception.

Chapter 4 discusses how you should view regulations and why it is critical that you understand how the agencies enforce environmental laws. Those of you who understand the agencies’ thinking will be able to steer your organizations away from being targeted for enforcement action. The last part of this chapter talks about how to set up an early warning system to minimize your own personal liability.

The discussions of liability are carried over into Chapter 5 where environmental risks and hazards are further quantified. You have to know your risks before you can manage them.

Chapter 6 reviews the danger of letting someone else manage and control your environmental data. This chapter goes on to discuss the over-used term “environmental sustainability” and what it really means. There is also discussions on the fallacy of “environmental indices” and why they should be avoided.

Environmental audits are an essential tool for environmental managers. If done properly, a full environmental audit can identify current state of

compliance and predict future performance. Chapter 7 discusses EPA's Environmental Audit Policy of 1986 and the two different types of audits. There is a lengthy discussion of the difference between a compliance audit and management audit. It covers the art of asking the right questions and getting high quality information during an audit. An example of root cause analysis is also included in the chapter.

Chapter 8 is one of the most important areas many environmental managers face. How you choose your consultant can make or break you. If you hire the wrong consultant to get a permit from an agency, that consultant can cause irreparable harm to your relationship and reputation with the agency. This chapter shows you what to look for in a consultant and what to avoid.

Chapter 9 is all about ownership of environmental plans. If your plant personnel do not have ownership of your environmental plans, the plans will not be implemented no matter how well they are written.

Citizen lawsuits are very common under federal environment laws - especially under the Clean Water Act. Chapter 10 offers a case study on what you should do in case you are faced with a citizen lawsuit.

Chapter 11 is on how to cope with agency inspections. What you do before, during and after an inspection defines the eventual outcome. This chapter contains numerous practical tips on how to prepare for an inspection and what to do during and after the inspection.

Accidents happen all the time and they often happen in the middle of the night. Chapter 12 outlines the steps you should take to prepare for an incident such as a chemical spill. It discusses your obligations under federal spill reporting requirements. It also describes what you need to do in California which has a very different spill reporting requirement. This chapter contains a list of all 50 state agencies and their state-specific spill reporting requirements. It also discusses what you can learn from the BP oil spill of 2010 in the Gulf of Mexico.

Chapter 13 introduces a rather tricky question of an auditor's duty to report should the auditor come across an event that could pose imminent danger to public health. The duty-to-report principle applies to auditors and environmental managers.

Chapter 14 has little to do with environmental regulations. But it touches on one of the key job skills of an environmental manager - how to communicate effectively with your managers and peers. You may have the best ideas in the world. But if your presentations put your audience in a coma, your ideas are not going to go very far. This chapter presents a much more effective and field tested way of preparing your PowerPoint slides. This is the approach I use in all my seminars.

Chapter 15 describes the step-by-step approach in setting up your own environmental management systems. Having an EMS in place will help you to stay in compliance and better manage your programs.

Chapter 16 summarizes the key differences in environmental regulations in California. Included is a discussion of the state's Prop 65 requirements which are unique in the country. Anyone who has a facility in California will need to understand the far reaching arms of Prop 65 and the liability it poses.

The last chapter is a summary of all the things an effective environmental manager should have or follow. Chapter 17 is in effect a blueprint for environmental managers to stay in compliance.

There are 10 appendices in this book. One of them is an in-depth discussion of the Clean Water Act which includes the permitting process, SPCC and storm water management.

Another appendix discusses the approach you should take in obtaining air permits and how to avoid Title V permits under the Clean Air Act. There is also a brief description of what Cap-and-Trade means.

Appendix 8 discusses five bad environmental/safety decisions or actions taken by companies that led to catastrophic results. These are teachable moments. It is always good management practice to learn from other people's mistakes.

At the end of book is a section on Additional Resources. Here you will find reading material that are used in the preparation of this book.

1. Understand Senior Management's Thinking

As one of the many managers in your organization, you will be competing for the attention of senior management - for action and money. You need to understand where you stand within the organization.

The one manager whose job requirements and objectives are most similar to yours is the safety manager.

How does senior management differentiate between these two jobs if environment and safety are not put under one manager?

At most monthly management board meetings, the Board of Directors gets an accounting of how much the organization has spent on safety-related items. It also sees the amount of Workers Compensation paid out due to injuries. It sees a direct correlation between the two. If there is a significant reduction in Workers' Comp payments, the Board will see that as a good return on investment in money spent on safety-related items. The accountability for safety is pretty straightforward.

It is not so in the case of money spend on environmental issues and the return on investment. Much of environmental spending is geared towards preventing pollution and/or avoiding monetary penalties. The regulatory impact of not spending any money on environmental issues does not show up for a long time. If senior management cuts spending on maintaining pollution control equipment, it may be a year or two until the agencies catch up on the violations.

Conversely, if management spends a lot of money on environmental management, the benefits of return on investment is not as obvious as a reduction in Workers' Compensation payments.

So senior management may wonder why the organization is spending all this money on environmental issues and not seeing any immediate tangible return of that investment. Alternatively, management may decide not to spend any money at all on environmental issues and not feel the impact for months or years until the violations catch up.

In general, corporate health and safety program gets much higher level of management support for a number of reasons. Cost accounting is the main

one. Performance of health and safety is monitored at the corporate level through workers compensation costs. A program that drives down the workers comp costs is viewed as an effective one. And rightly so. When the management board sees an 80% reduction in workers comp cost in a few years after implementation of a safety program, it is going to continue to support it with large budgets and manpower.

Safety performance can be reduced to dollar and cents for the purpose of monitoring its effectiveness.

Environmental performance, on the other hand, is much harder to track. Environmental protection budgets are often hidden in maintenance line items. The benefits are even harder to quantify – as opposed to a workers comp cost. An environmental program that is working for the company means the company is not being fined. There isn't a line item in the monthly budget to senior management that reflects that. On the other hand, senior management only knows that the environmental program has failed when it is hit with a big fine. In other words, sometimes senior management does not see a need to maintain or improve the environmental budget until something bad happens.

The key really lies in environmental cost accounting. If a company's accounting system can show management the financial benefits it is getting from its proactive environmental program, management will continue to support it in the same manner that it is supporting the safety program.

Unfortunately, not too many companies have such an environmental cost accounting system because it often involves redesigning the entire system which many companies are reluctant to do.

Unless you report directly to a Vice President or to the Law Department, you will have to live with this reality.

The way to navigate through this reality is to maintain good working relationship with your corporate attorneys. Senior management pays attention and listens to their in-house counsel. There is a chapter in this book on how to work with attorneys.

Another way is to be very effective in communication your environmental issues to senior management through presentations or reports. Chapter 14 and Appendix 4 cover these two issues respectively.

Always maintain good working relationship with your safety counterpart. There are many areas of overlap between safety and environment when it comes to training. For example, when the safety manger is doing hazard communication training, try to tack on environmental awareness training. Coordinated environmental health and safety training is much better for the employees.

2. Working with Your Colleagues

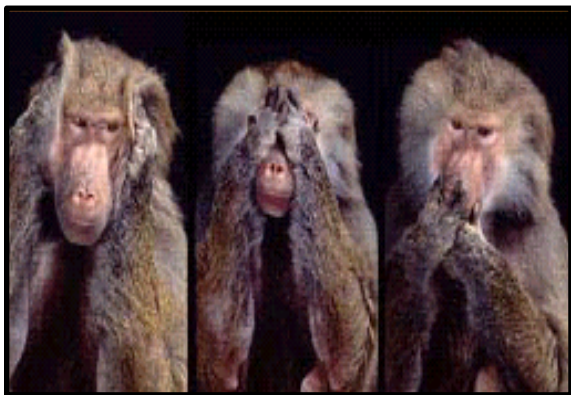
As an Environmental Manager, you work with many people within your organization - from the CEO, vice presidents, general managers all the way down to the janitors. Actions taken by any one of these people will impact your work or your ability to do your job. They could also create personal liability for you.

When you are working with your staff, always remember the phrase “Don’t shoot the Messenger”. If someone on your staff brings you bad news about a permit violation and you start yelling at that person, that individual is not likely to bring you any more “bad news” for fear of losing his job. This puts you in a very precarious situation of being in isolation when your staff is afraid to tell you the truth about what’s going on out there.

It is a recipe for disaster.

You should always be aware of what your co-workers do and say on environmental matters.

As the environmental manager within your organization, you want to pay special attention to what your employees say and do when it comes to compliance issues.



The “hear no evil, see no evil and speak no evil” approach does not work here.

If someone within your organization – especially one at a more senior level than you - makes some suggestions to you that you know to be in violation of environmental regulations, it is your responsibility to voice your objections visibly and forcefully. Let those around

you know that you will not be party to any “conspiracy” to commit an environmental crime. Let your supervisor know immediately. If your supervisor is the person suggesting such illegal activities, work your way up the corporate chain of command until you find someone who will listen to you and will take action. If you cannot find any one to listen to you, perhaps it is time for you to get another job.

Remember this: your silence can often be taken to mean acquiescence.



When something goes wrong, the agency is going to want to speak with you. They are going to ask you how did it happen, when did you know about it and why did you let it happen if you knew about it.

Don't go with the flow and certainly do not go along just to get along. It can be hazardous to your well being.

There is a section later on in Chapter 4 on how to set up an Early Warning System to protect you.

Working with Attorneys

Your work often requires due diligence which inevitably involves legal liability issues. You will need to work with your attorneys on this. Your corporate attorneys can be your best friends or your worst enemies - depending on the approach you take with them.



First of all, do not allow yourself to be intimidated.

Do not let anyone tell you that because you are not an attorney, you cannot talk intelligently about environmental liabilities. You do not need a law degree from Harvard Law School to understand that falsifying records under the Clean

Water Act is a crime. You also don't have to be an auto mechanic or mechanical engineer to drive a four-ton SUV.

As in the case of hiring outside legal counsels, don't hire big law firms to work on small legal cases. If you do, you will end up paying \$200 per hour for some young lawyer to learn on the job under the supervision of a \$400 per hour law partner.

In most corporations, it is the in-house counsel who chooses which outside law firm to retain. But that does not mean you should cede your role and

responsibilities entirely and turn your case over to your legal team. You should work very closely with the legal team since you are the environmental manager and you know all the underlying facts about the case. Insist that you be involved in the discussions of strategies. Better yet, lead the discussions on strategies.

Remember – you not only know the technical issues, you also know the folks at the agency. Since legal strategies inevitably involve relationships between your company (represented by you) and the agency, it makes good management sense that you be involved in the discussions. Any good attorney will understand that. If you don't insist, you will be relegated to a mere "technician" – a "janitor in a suit" in the eyes of your legal counsel.

The best way to ensure a meaningful role within your legal team is to develop a professional rapport with your in-house counsel. You do that by keeping your company attorney up-to-date on pending environmental issues at your plants. Don't call your attorney only when you have a big legal problem. Invite the attorney to visit your plant before problems arise. If you know one of your in-house counsels is visiting a plant, try to schedule a brief walk through with the attorney and review some of the on-going environmental issues.

Your in-house counsel will manage outside counsel. You don't need to be concerned about that but keep in mind that all outside law firms exist to bill clients.

Here is a funny but sad story with a multi-national corporation. The environmental manager attended a meeting with several of his vice presidents at a large law firm. This was one of those law firms with internal spiral staircases, mahogany wall panels, marble flooring and corridors that resemble a fine arts museum – all paid for by their clients. One of the VPs made the mistake of asking a law partner a simple environmental question. The partner said: "Let us do some legal research on it and get back to you". A month later the environmental manager received an invoice from the law firm for 14 hours of legal research (at \$300 per hour). He was horrified and immediately faxed a short paragraph to the law partner requesting the results of the "legal research" and to cease work on any further research. Not only did he not get the "research" results, he received an additional invoice for \$75 (minimum charge unit of 15 minutes) for reading his "stop work" fax. A true story¹

When to get your attorneys involved

One time that you should NOT get your attorney involved with the agency is at the early stage of a Notice of Violation (NOV) dispute. If at all possible, try to resolve the issue with the inspector or his supervisor without officially involving any attorney. Once you fire off a formal letter from your legal counsel, the agency will respond through its legal counsel and the process takes a course of its own – a course that will rapidly remove you from the process. In general, the higher you go up the chain of command in a violation dispute, the less control you are going to have. The last thing you want to see happen is to have some judge who knows absolutely nothing about your operation telling you how you should make your widgets. Sure – if there are intricate legal issues involved with the citations, consult your legal counsel by all means. Take it to the Supreme Court if you have to. But if the NOV is of a minor technical nature, get it resolved at the lowest level possible. Better yet – if you can correct the violations before the inspector leaves the premise, do so. Chapter 11 discusses what you should do before, during and after an inspection.

This bit of sound advice above came from a former assistant district attorney in California who spent many years prosecuting environmental crimes.

Another time when you may wish to involve your attorneys is when you decide to conduct a comprehensive internal audit. The best way to “protect” your audit results is to have your in-house attorney retain an outside law firm and consulting firm to perform the audit for the purpose of obtaining legal advice. The audit report would go directly to your legal counsel and be discussed only with persons with a need to know.

Keep in mind that only the report itself is protected from agency discovery. The underlying facts are never protected. And also remember that you should never do any internal audit unless you have the management commitment and financial resources to fix all the problems uncovered in the audit in a timely manner. Chapter 7 discusses environmental audits in details.

You should not do an internal audit because you think you can protect your audit results. You do audits because you want to fix problems before they

become too big and costly. The fact that the report itself can be protected is a bonus.

Not All Attorneys are the Same

There was a discussion in LinkedIn a few years back when an environmental consultant was lamenting openly why the federal government was immune from federal environmental laws!!

When asked who told him that nonsense, he proudly announced that his authoritative source is an attorney (so it must be true). The attorney also told him that the federal government could pollute its own land due to sovereign immunity and anyone can do what he wants to his own property. Just imagine that! So we have a clueless attorney advising an even more clueless environmental consultant who ought to know better.

The attorney was an old real estate fellow who had never heard of CERCLA and was in a coma when sovereign immunity was done away with many years ago.

Have you ever posed a question to someone and the person would reply: "I will check with my attorney". It was as if the attorney has all the answers – and correct answers at that. If that were the case, there would not be a robust judicial system in this country where two attorneys enter a courtroom and out comes one winner.

Many in-house counsels at big firms with large law departments rarely handled any specific EPA or OSHA cases. They retain and manage outside counsel. And rightly so.

It is important to understand that not all attorneys are the same. That is true in all professions. It is a simple enough principle (attorneys and engineers all have their own specialties within their own professions) and yet it is often overlooked. You would no more hire a civil engineer to design a refinery than to hire a chemical engineer to build a dam.

Always do your own due diligence before accepting an attorney's words or anyone else's. Or else you are going to look like that consultant in LinkedIn

who was misled into thinking sovereign immunity still exists for federal government agencies.

Working with Plant Managers

This section gives you some practical ideas and insights on how to interact with your colleagues at the plants. Let's start by taking a hard look at the plant manager. The degree to which your plant maintains its environmental compliance status depends largely on the attitude of the plant manager.

There are basically two types of plant managers. The first type understands the need to stay in compliance and will work with you to achieve that goal. The plant managers in this group understand the legal consequences of environmental non-compliance and will make sure that his staff works with you to stay in compliance. These plant managers defer to you on environmental issues and seek your input and advice. Fortunately, most plant managers fall into this category. The second group of plant managers is made up of those people who consider environmental compliance a nuisance.

With the first group of plant managers, your work is fairly straightforward. All you need to do is to make sure that the plant personnel get the necessary corporate support to fix any deficiencies. Make sure they have the necessary resources to stay in compliance.

As you go through the facility and notice a non-compliance situation, you should sit down with the plant manager or person in charge and go through what needs to be fixed. Your immediate focus should not be on preparing an audit report that details all the environmental problems. The focus should be on getting the problems fixed as quickly as possible.

For example, one of your central roles may be to help the plant prepare a capital appropriation request in order to obtain the necessary funding from corporate to get the issue resolved. If your financial resources are not sufficient to tackle all the problems, prioritize them and work on the ones with the most significant human health or environmental impact first.

By the way, once the problem is corrected, make sure you document the efforts your company has undertaken to resolve the issue. It never hurts to document your good faith efforts.

A few words of caution here: Try not to do everything for the plant even though it will make you real popular at the plant. You want to make sure that the plant personnel have ownership of any plans or documents that are specific to their operation. Support them by all means – but don't do all the work for them. For example, you want to make sure that **they** are involved in the development of **their** Spill Prevention and Control Countermeasure Plan (SPCC), **their** hazardous material inventory form (Tier II report), **their** Storm water Pollution Prevention Plan, or **their** hazardous waste contingency plan.

Most of these plans contain plant-specific information and require documented inspections. Unless the plant personnel are involved in the development of these plans, they are not likely to have ownership and nothing will be done by way of follow-up or implementation.

For example, the RCRA contingency plan requires the facility to identify an on-site emergency coordinator and to list where hazardous wastes are accumulated. Tier II report requires the plant to show where they store certain hazardous chemicals. Since they know where they store their own chemicals, it makes sense for the plant to prepare its own inventory. It is fine to have outside consultants come in to assist the plant personnel in preparing their hazardous waste contingency plan or spill prevention plan. Just make sure the plant personnel are involved in the process. Otherwise, the plan will end up being just a nicely prepared document prepared by some outside consultants that sits on the plant manager's bookshelf. No one will ever look at it, update it or implement it because there is no ownership of the plan. And when the agency inspectors come by to inspect the plans, they always look for evidence of implementation. For example, if the plan calls for weekly inspections, the agency wants to see log book entries that demonstrate that. The inspectors will always check to make sure the plans are current and up-to-date.

The second group of plant managers looks upon environmental compliance as a hindrance to meeting their production goals. These folks are totally focused on numbers – meeting their production quotas and getting their year-end bonuses – and they will do just about anything to circumvent environmental regulations. Worse yet – some of these managers also take an adversarial approach to the regulatory agencies. They see everything as “us versus them”. And if these plant managers hold some “anti-

government” political views, you will be in for a treat. Another major problem with this group of plant managers is that their hostile attitude toward the agencies will permeate through the entire plant through staff meetings.

If you sense that the relationship between the plant manager and the local agency staff is somewhere between antagonistic and hostile, you need to bring that situation to a halt as quickly as possible. Let senior management at headquarters know about it as well. It is a sad but true fact that many major enforcement actions can be traced back to a poor working relationship between the regulator and plant personnel.

Interestingly enough, very often you will find these same plant managers pay a lot of attention to workers’ injuries while totally ignoring environmental compliance issues. The reason is quite simple. The monthly costs of safety non-compliance can be easily tracked by senior management through incident rates and workers comp costs. Environmental non-compliance costs, on the other hand, are much harder to track. These costs are often hidden in overhead and maintenance. As a result, senior management at the corporate level often set safety goals for their plants and reinforce them with safety performance bonuses for the plant managers. Lower incident rate translates to a larger year-end bonus.

The attitudes of many of these plant managers are then shaped by such financial incentives and that explains why they pay much more attention to safety concerns than environmental issues. If you find yourself faced with such a situation, what you want to do is to work closely with the safety manager. Try to incorporate some environmental training at the same time when you or your safety counterparts do safety training. For example: When you are doing OSHA’s hazard communication training, tack on at the end a session on emergency response training for those employees who handle hazardous wastes.

With this second group of plant managers, you will also need to make sure that the plant manager’s supervisor is informed of all non-compliance issues and extra efforts must be made to ensure follow-up. You want to find someone up the management ladder – above the plant manager’s level- who is cognizant of the need to stay in compliance. You will need the support of this senior corporate officer to help you put your program in place at the plant. In other words, you need a “champion” who can overrule

the recalcitrant plant manager. If such a person does not exist within your organization, you may want to think about moving on to another company.

You also need to be vigilant in making sure that you don't become party to a "bad decision" making process. For example, if a plant manager should ever suggest to you or his staff in your presence that they "alter" or falsify a wastewater Discharge Monitoring Report or ship hazardous wastes to an unlicensed facility, you need to make your objections known in a highly visible and documented manner to everyone involved – including the plant manager's supervisor. The worst thing you can do for yourself and your company in this case is to "go along in order to get along". In a highly regulated industry, silence on your part can be easily interpreted by the law enforcement agencies to mean acquiescence. After all, you are supposed to be in charge of the environmental programs.

3. Working with Regulatory Agencies

Being able to work effectively with the regulatory agencies is a critical element in any Environmental Management System. If you have a cordial and professional working relationship with your agencies, you are more than half way there. On the other hand, if your approach is to constantly maintain an adversarial or antagonistic relationship with the agencies, you will be spending much of your valuable time and limited resources on a rather unproductive endeavor.



Here are some practical and “field-tested” pointers on how you can develop a professional and effective working relationship with the regulatory agencies:

1. **Do your homework.** You should always research the problem areas or issues that you want to get resolved with the agency. Check to see if there are any specific considerations that should be brought up. See if another company has resolved a similar problem with the same agency and find out what the solution is. You should also research any applicable precedents outside of your agency’s jurisdiction that may be pertinent to your case so that you can share them with the agency. What you are doing here is in effect giving the agency a certain level of comfort in knowing that other agencies have resolved similar issues. You are giving them coverage.
2. **Make a point of meeting the agency staff before you submit your permit application.** Lay out your preferred approach and get to know the “case worker” or permit writer who will be handling your application. Always try to make a point of paying a courtesy “get-to-know-you” kind of visit. At the very least, phone the person at the agency and introduce yourself. In many cases, you will be pleasantly surprised by how cooperative the agency staff can be. Keep in mind that it is also to the agency’s advantage to work things out amiably with your company. A professional working relationship with you can and will save them time as well. Try to deal with the agency staff from their perspective – try to put yourself in their shoes.

3. **Never attack the agency's regulations.** Never attack the agency's regulations in front of the agency staff - no matter how you personally feel about the regulations. It does not matter how nonsensical you may feel about those regulations. Keep your personal opinion to yourself. Remember that it is the agency's job to enforce the regulations. If you don't like a particular set of environmental regulations, the time to make your point is during the promulgation (public comment) process. Attacking the agency staff will not enhance your working relationship one iota. All it does is antagonizes the staff and works against your final objective – resolution of a problem you have before the agency. Remember this one too - they have the laws that you don't like on their side. You can (and often should) challenge the regulations and argue your case with your "case worker". State your case clearly and objectively. And again make sure you don't make it personal. Remember this – everything is negotiable (both sides can win in a negotiated settlement). But as soon as you make it personal, the issue rapidly degenerates into a zero-sum game (allowing one winner and one loser). You want to avoid that as much as possible because more often than not you will end up being the loser.

4. **Never miss a deadline.** Never miss a deadline that you have agreed to with the agency. Why? Because it makes the agency look bad if you fail to meet the deadline. More important, it makes the person who negotiated the agreement with you look very bad. And that person is likely to make life miserable for you. For example, if you enter into some kind of consent agreement with the agency to do certain tasks, you want to make sure that the deadlines specified in the agreement are met. Make sure you have the resources to complete the tasks at hand and meet the deadline. Remember that The consent agreement is a contract between your company and the agency. Failure to meet the agreed-to deadlines means you have broken your promise with the agency. There is more discussion of this later on in this chapter.

5. **Work across the table and solicit suggestions from the agency.** There have been instances when an agency official would go out of his way to help the regulated community by suggesting different approaches to the problem at hand. This happens only when there is

trust and rapport between the parties. As stated earlier, people work better with people they like.

6. **Avoid getting caught between the federal EPA and your state agency.** If your dealings require the approval of both agencies, say in the case of a federal wastewater discharge permit in a state that has not been delegated the authority to issue the permit, you want to make sure both agencies know what you are doing. Keep all parties informed by email or meeting notes. Don't count on the federal and local agencies to keep each other informed of your progress.
7. **Bounce your draft reports off the agency.** If there is a deliverable involved, you might want to bounce the draft off the agency staff informally (in a face-to-face meeting if possible) before you submit it formally. Some agencies like that idea - especially if you have established some sort of rapport with them. This approach gives them a chance to preview what is coming down the pike. Often times they will give you some timesaving suggestions that you can incorporate into your final application. They sometimes go out of their way to help you.
8. **Always submit your documents to the agency on time.** It is a matter of common courtesy to deliver what you promise in a timely manner. You expect timely delivery from your material suppliers – so why shouldn't the regulatory agencies expect the same from you?
9. **Make sure you hire the “right” consultant.** If you are hiring a consultant to get your permit for you, make sure that consultant knows how to work with people. The last thing you need is a consultant who antagonizes the permit writer. Chapter 8 discusses how to select the right consultants.

Here is a true story: One Fortune 500 company had a wastewater discharge permit issue before the regulatory agency. The plant manager hired a local consultant who was very knowledgeable about the technical issues and the local regulations. Unfortunately he also held some very strong personal views about the regulations and he took it upon himself on numerous occasions to express his views about the regulations and the agency staff who enforced them. He told the staff that they were stupid and ignorant to be enforcing such bad regulations at face-to-face meetings with

the agencies! This went on for many months and the permit application went absolutely nowhere until this local consultant was eventually fired and replaced by a much more personable and equally competent consultant. The relationship between the company and the agency took a dramatic turn for the better. But the company lost many months in the permitting process.

The moral of the story is this: Be very careful how you choose the consultants to represent you before an agency. Make sure your consultant has the right temperament and the interpersonal skills to work with people in the regulatory agency.

The bottom line of all of this is very simple. Treat agency personnel the same way you would like to be treated – with courtesy and professionalism. Experience shows that this common sense management approach goes a long way.

Meet All Deadlines with Agencies

In general, you are required to file for permit renewal 180 days before they expire. Do not wait till the last minute to do so.

Many air and waste discharge permits also have submission deadlines that you are required to meet on a regular basis. Examples are your Discharge Monitoring Reports (DMRs) which are due every month or quarterly. Try to complete them at least a week before the due date.

And if you make a commitment to an agency, you need to do everything within your power to meet whatever deadline you have agreed to with that agency. Bad things will happen to you if you fail to do that.

The following is a true story.

A large tuna processing plant on a South Pacific island had a small anhydrous ammonia leak inside its packing room on a Friday afternoon that resulted in the evacuation of several hundred workers. Some of the workers were overcome by the noxious fume and had to be kept in the local hospital overnight for observation.

After the factory had been evacuated, the local EPA official asked the plant manager to close the factory over the weekend to allow for ample time to

clear the air of ammonia fume. The plant manager – looking at the perishable goods in the packing room and realizing that if he didn't send the workers back in right away, all the perishables - valued at about \$50,000 - would be spoiled, turned to the local EPA official and said dismissively "Over my dead body will I shut down for the weekend. I am ordering the workers back in tonight to finish packing."



Somewhat offended by the plant manager's dismissive attitude, the local EPA officer promptly contacted OSHA the following Monday and

requested that a safety inspection be conducted as a result of the ammonia leak. A safety inspector journeyed to the island two days later. At the opening conference, the inspector told the plant that he was there at the specific request of the local environmental agency and all he wanted to see was the location where the ammonia leak occurred.

Unfortunately, during the plant tour, the inspector noticed that the machine noise level inside the packing room was extremely high and that a hearing protection program was not in place. He also discovered that the plant did not have a written hazard communication program in place. He asked several workers during the inspection tour and it was clear to him that none of the workers had been made aware of the availability of Material Safety Data Sheets and the environmental hazards of the chemicals they came into contact daily.

When the inspector showed up at the plant, he also had with him copies of computer printouts showing numerous past violations and warnings from OSHA about the lack of hazard communication and hearing protection programs.

At the end of the inspection, the OSHA inspector met with the plant manager, the corporate safety manager and corporate environmental manager at the closing conference. Both the corporate managers had been on location to do safety and environmental training. The inspector summarized his observations and findings and said that he would

recommend to the agency that enforcement action against the company for these safety infractions be taken. In an effort to avert or reduce the severity of any possible penalties, the corporate safety manager showed the inspector a copy of the company's newly developed safety program that was based on behavior modification.

The inspector reviewed the program and was very impressed with the program. He commented that it was one of the best safety programs he had ever come across. The corporate safety manager promptly asked the inspector to lessen any proposed penalty and promised to implement the entire safety program at the plant within six months. In a combination of commitment and bravado, the safety manager even went as far as to promise to personally invite the inspector back to the plant in six months' time to see the progress. The inspector took him up on the offer.

The end result of this interesting negotiation process was that OSHA offered to reduce its proposed penalty in half - from \$50,000 to \$25,000 – in exchange for a written commitment from the company that it would implement a written hazard communication program and a hearing protection program within six months. This was the time frame suggested by the safety manager. A consent agreement was subsequently drafted up and signed by the company's Vice President.

Six months later, the inspector arrived on the island and discovered to his amazement that there was no evidence whatsoever of any hazard communication program. Nor was there any hearing protection program to be found anywhere. The company never followed up on its commitment!

In response to this breach of trust, the inspector sent in a team of industrial hygienists who stayed at the plant for several months and conducted floor-to-ceiling and wall-to-wall safety inspections. They uncovered well over 100 repeat and willful violations of safety standards. Company internal memos were discovered under subpoenas showing employees' written concerns about various safety issues to management which went unheeded.

After a lengthy investigation lasting almost a year, the agency proposed a penalty of \$16 million for all the alleged safety violations. The company had to retain external safety consultants and a large and very expensive labor law firm to negotiate with the agency. After considerable legal and consulting expenses – totally well over a million dollars – the company was

able to reach a final settlement of \$1.6 million civil fine with the agency to resolve all the violations. At one point during the negotiation, it was rumored that the agency threatened to go to the company's corporate headquarters to present the citations with a camera crew in tow ala "60 Minutes" style.



What were the lessons learned in this case?

Lesson 1: It does not pay to antagonize your local environmental official. Just like Newton's Law of Motion, there is always a reaction to any action. The dismissive manner in which the plant manager treated the local EPA official right after the ammonia leak triggered the safety inspection. If your plant management does not have a positive and professional working relationship with the local regulatory agencies, you have a disaster waiting to happen. You have a ticking time bomb that needs to be defused. It is that simple.

Lesson 2: Once you make a promise to an agency to do certain things by a negotiated deadline, you need to meet that commitment. If you fail to meet the deadline, you effectively force the agency personnel to take drastic actions against you. Why? Because you have broken your promise to them and you have made them look bad within the agency. It is simple human nature. The lack of follow-through by plant management and the corporate safety manager resulted in a \$1.6 million penalty instead of a \$25,000 fine.

Perhaps this story is better named: "How to turn a \$25,000 fine into \$1.6 million in six months without doing anything".

4. Know the Regulations and Minimize Your Liabilities

Congress passes environmental laws that give EPA the authority to promulgate regulations. These environmental regulations are codified in Title 40 of the Code of Federal Regulations (40 CFR).



For a regulation to be codified, it has to go through a lengthy formal process starting with EPA publishing in the Federal Register that it intends to develop a certain set of regulations. The agency then sets aside a period of time (30 to 90 days) for the general public and the affected business community to comment on the draft regulations. If there is sufficient interest or controversy, the agency will hold public hearings to solicit comments. After the comment and hearing process, the agency will review all the comments by accepting some and rejecting others and come up with a set of final regulations that will be published in the appropriate section of the 40 CFR. The date that the new final regulations go into effect will also be published in the 40 CFR.

Always read the preamble of the new regulations. It lays out the agency's reasoning and interpretation of the regulations. It will give you insights into the new regulations and will help you in understanding the nuances.

If the new regulations are very controversial - such as climate change - some affected parties and state governments will file lawsuits in federal court challenging the validity or constitutionality of the new rules. Some cases will go as far as the US Supreme Court where they will be adjudicated.

Many environmental laws are finally adjudicated by the Supreme Court. For example, when EPA promulgated new rules to regulate fine particles with diameters of 2.5 microns or less (PM 2.5), the agency was promptly sued by many affected parties. The case went all the way up to the Supreme Court which upheld EPA's statutory authority to revise any National Ambient Air Quality Standards (NAAQS) for the purpose of protecting human health.

In another famous case involving greenhouse gas emission, the Supreme Court ruled in favor of EPA in agreeing that greenhouse gas is an air

pollutant defined under the Clean Air Act. The Court further ruled that if the agency were to determine that greenhouse gas was injurious to human health, the agency would have a statutory obligation and duty to regulate it under the Clean Air Act.

Federal laws allow for public participation in the case of permit issuance. The general public has the right to request public hearings on all permit applications. Many federal laws also have provisions for citizen lawsuits. This is very common in the Clean Water Act and Clean Air Act. If the agencies fail to take meaningful enforcement actions against a polluter, private citizens have the right to file lawsuits against the polluter. Chapter 10 discusses how to deal with citizen lawsuits.

Some laws even allow for “bounty hunters” or “citizen prosecutors”. For example, the federal Clean Air Act of 1990 provides for up to \$10,000 reward to private citizens for reporting a violation that results in conviction.

Prop 65 in California is a classic case of “bounty hunting”. Part of the penalty goes to the person who files a successful lawsuit against a violator.

Relationship between EPA and state agencies

It is important to understand the relationship between EPA and state agencies in terms of environmental compliance.

Most of the federal environmental regulations are delegated to the state level. What that means is that the federal government has given the state agencies permission to run their own programs fashioned after EPA’s regulations. Many states simply incorporate the federal regulations into their own state rules through a process known as “incorporate by reference”. With some exceptions, you will find the exact EPA language in the state regulations.

EPA has also told the states that they can adopt more stringent requirements if they so choose. In other words, the federal regulations in the 40 CFRs are the minimum level of performance nationwide.

That’s why it is always prudent to check your state agency’s website to see if there are more stringent state requirements.

It is also important to note that EPA always retains oversight authority on all delegated regulations. For example, if you are negotiating a new wastewater discharge permit with a state agency under the Clean Water Act, EPA has the final approval on that permit. So you are in effect negotiating with EPA in the background. The terms and conditions you reach with the state agency may be vetoed by EPA.

How to stay current

It is critically important to keep current on environmental regulations. There are some very simple and cost-effective ways to stay current.

The simplest way is to visit EPA and state agency's websites on a regular basis — at least once every few weeks. The websites will provide you with the latest information on upcoming regulations. Many of these websites also allow you to subscribe for email alerts so that anytime there is any news on the topics that you have chosen, the agency will send you an email notification. The best part of this approach is that it is also FREE.

If you belong to any trade association, chances are it will have an environmental committee tracking pending regulations that may impact your industry.

The most expensive and least preferred way is to pay some third party thousands of dollars a year to keep you up to date. Many of these commercial services will inundate you with a lot of extraneous information. You will soon be lost in a sea of useless and often irrelevant information. It is worth noting that these commercial services get their information from the same sources where you can get for free.

Another thing to remember is that environmental regulations do not change overnight. It generally takes 6 months to a year for an agency to adopt new regulations since it is required by law to follow a process that will take that long. So you should have plenty of time to keep up.

The Importance of Documentation

There are generally two schools of thoughts on documentation. Your attorney will probably do not want you to document everything in order to avoid creating a paper trail. That is good advice.

In certain instance, however, it is also good management practice to have detail documentation.

Here is one example:

You are a small quantity hazardous waste generator (SQG). That means you generate between 100 and 1000 kilograms of hazardous wastes in a calendar month. Using an average density of 8 lbs per gallon, that works out to be less than five 55-gallon containers in a month.

As a SQG, you are allowed to stored your wastes on-site for up to 180 days without having to obtain a RCRA Part B permit. You can actually store them for 270 days if you decide to ship your wastes to a commercial facility that is more than 100 miles away from you.

Let's say you generate only two 55-gallons containers of hazardous wastes in each month. After four months, you have accumulated eight drums. You decide to ship these 8 drums out to a facility for disposal even thought you still have 2 months to go on your time limit. You fill out you hazardous waste manifest and ship out the wastes.

A few weeks later, your inspector shows up and he reviews your manifest. It shows that you ship out 8 drums on a particular day. All he has is the waste manifest. The 8 drums with accumulation start dates on the labels are gone. He is going to assume that you generated those 8 drums in a month and insist that you are a large quantity generator unless you have documentation to show him that you never generated more than 5 drums in a month and all those 8 drums had been accumulated over a 4-month period.

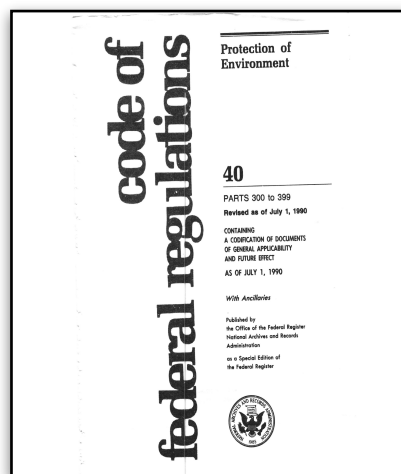
That's why it is important to keep track of how many drums you fill up each month and keep that record. The regulations do not require you to do so. But it is distinctly in your best interest to document your waste accumulation if you are a SQG.

Another area where you should have good documentation is your training records. Always document the training you provide to your employees. Make sure all the attendees sign in for any kind of training whether it is a 5-day seminar or just a short training video shown over the lunch break.

Learn to Navigate the 40 CFR

Reading and understanding environmental regulations can be tricky at times. Many regulations are set up as all encompassing requirements but with exemptions. The regulations that govern the management of hazardous wastes is a classic example. You do not need a RCRA Part B permit to store wastes on site as long as you don't exceed the storage time limit.

There was an article in a trade magazine that discussed secondary containment for hazardous waste container storage areas. It cited 40 CFR 264.175. The article was written by someone who makes and sells secondary containment units for a living.



It is important to understand that there is NO federal requirement for secondary containment at hazardous waste storage area IF you are a generator. 40 CFR 264.175 pertains only to Treatment Storage and Disposal Facilities (TSDF) – these are the commercial facilities that treat store and dispose of other people's hazardous wastes and they have a RCRA Part B permit.

Waste generators are exempt from this requirement because they store their wastes for no longer than 90/180/270 days depending on how much wastes they generate in a calendar month. As long as they stay within their appropriate time limits, they are not required to have a RCRA permit and 40 CFR 264.175 does not apply.

So if a waste generator is not conversant in reading the nuances in these regulations, it is going to rush out and spend a lot of money setting up secondary containment when none is required by federal regulations.

In general it is good management practice for waste generators to have secondary containment but it is NOT required by federal law.

However, it is also important to note that some states do have state laws that require secondary containment for anyone who stores hazardous wastes or material on site. Pennsylvania is one of these states. That's why it is critical to stay abreast of state-specific requirements by visiting your state agency's website on a regular basis.

Also understand that many environmental laws carry strict liability as well as joint and several liability. Strict liability means you are liable for an action because you are responsible for it. For example, under the Superfund law, you are strictly liable for the waste if the agency can show that you were the one who sent in the wastes. It does not have to show negligence or intent on your part.

Under joint and several liability, you are responsible for the entire situation together with all the other responsible parties. In Superfund, you and all the other generators who shipped wastes to a Superfund site will be responsible for the entire cleanup cost of that site both individually and collectively. In most cases, your share of your liability will be based on the size of your contribution. If your wastes make up 20% of the total amount, you pay 20% of the cleanup cost.

However, if some of the other responsible parties are not able to pay due to insolvency, the rest of the responsible parties will have to pick up the slack. So you will end up paying more than "your share". This is the main reason why you want to do due diligence before you ship your hazardous wastes to a site . You want to make sure that all the other generators are reasonably sound financially so that they can pay their fair share of the total cleanup cost.

Title 40 of the Code of Federal Regulations (40 CFR) contains pretty much all regulations pertaining to the environment. Here are some practical tips to decipher those seemingly convoluted and undecipherable regulations:

1. The first thing you need to do is to suspend all notions of common sense when you read the 40 CFR – or any regulations for that matter. The numeral 40 refers to Title 40 which deals with environmental

regulations. What seems obvious and intuitive to you may not be so in the regulations. For example, under the federal Resource Conservation and Recovery Act (RCRA) regulation 40 CFR 261, it states that a material must first be a “RCRA solid waste” before it can be further classified as a hazardous waste. If you follow your common sense and think that a RCRA solid waste must therefore be something in solid form, you would be wrong. A RCRA solid waste – as defined in the regulations - can be a sludge, a semi-liquid or even a gas. When in doubt, always go back and read the definitions of terms in the codes.

2. Pay special attention to qualifiers such as “shall”, “may”, “and”, and “or”. When the regulation says you “shall” do certain things, it means you are required by law to do so. There are no other ways around it. If it says you “may” do certain things, it means you have the option of doing it or not doing it. If two conditions are connected with the word “and”, it mean you have to meet both conditions. The term “or” applies to either or any of the conditions.
3. Note the exemptions in the regulations. Many regulations are drafted in the form of exemptions. In other words, the regulations will often state that you are exempt from meeting certain requirements IF you comply with some other specific conditions. A classic example is in RCRA regulations. It states that everyone - including generators - must obtain a Part B permit to store hazardous wastes on-site. However, it goes on to say that you may store your hazardous wastes without having to obtain a RCRA Treatment, Storage and Disposal (TSD) facility permit IF you store your waste for no longer than the prescribed time limit (e.g. 90 days for large quantity generators) and you also meet a host of other requirements such as proper management of containers and having a Contingency Plan, etc. The implication from an enforcement standpoint is that if you violate the storage time limit or any of the other conditions, the agency can cite you for operating a TSD facility without a RCRA permit!
4. Always check the state regulations. Since most of the federal environmental programs have been delegated to the state governments, you need to check to see if your state agency has additional and/or more stringent requirements. The federal government allows states to impose additional or and/more stringent

requirements if they so choose. And many of them do. For example, California is well known for its stringent state-only environmental regulations.

5. Some of the regulations are arranged in a less than obvious or logical manner. For example, the accumulation time limit for hazardous waste generators is spelled out in the Subpart C of 40 CFR 262 known as “Pre-Transport Requirements”.

To illustrate Point #5, let’s take a look at a small excerpt from 40 CFR 262.34 which outlines the requirements for a large quantity generator.

§ 262.34 Accumulation time.
(a) Except as provided in paragraphs (d), (e), and (f) of this section, a generator may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, provided that:
(1) The waste is placed:
(i) In containers and the generator complies with the applicable requirements of subparts I, AA, BB, and CC of 40 CFR part 265; and/or
(ii) In tanks and the generator complies with the applicable requirements of subparts J, AA, BB, and CC of 40 CFR part 265 except §§ 265.197(c) and 265.200; and/or

The regulation begins by excluding §262.34 (d), (e) and (f).

These happen to refer to Small Quantity Generators. It then goes on to say that you can store your wastes for up to 90 days without having to obtain a permit provided that certain conditions are met.

One of the conditions is that the containers must meet certain requirements under 40 CFR 265 which are the requirements for a

TSD facility with interim status.

Some of the requirements that a Large Quantity Generator must meet in order for you to be exempt from the RCRA permitting process are stated in subpart I of 40 CFR 265 (Use and Management of Containers); subpart J (Tank Systems); subpart AA (Air Emission Standards for Process Vents); subpart BB (Air Emission Standards for Process Leaks); subpart CC (Air Emission Standards for Tanks, Surface Impoundments and Containers) and so on. There are also two exceptions listed here under 265.179(c) and 265.200. These refer to tank closure and waste analysis.

This illustration shows that what you need to do is to systematically go through every single section referenced in §262.34 and work backwards to

weed out all the exceptions within each section. It is a tedious but necessary process.

One way to make the task easier is to list all the applicable rules in a table form as you work through the CFR. You can then use that table for future reference.

To sum up: The only way to unravel the CFRs is to start by looking up the definitions of the various terms and then work your way through the maze one step at a time in a systematic fashion. Fill out a table as you go along so that you will end up with a list of all the applicable regulatory references.

Here is an example:

Requirements	Large Quantity Generator	Small Quantity Generator
Maximum Accumulation time	90 days	180 days; 270 days if wastes shipped to a TSDF over 200 miles away
Maximum amount on-site at any time	no limit	6000 kilograms
Container placement for ignitable or reactive wastes	greater than 50 feet from property line	none
Preparedness prevention plan	yes	yes
Written contingency plan	yes	no

If at the end you still find yourself completely lost in the maze, you may want to retain the service of a consultant or an environmental attorney.

Understand how Enforcement is done

The ten EPA regional offices alone conduct about 15,000 inspections each year. Many more inspections and enforcement actions are taken at the state and local levels.

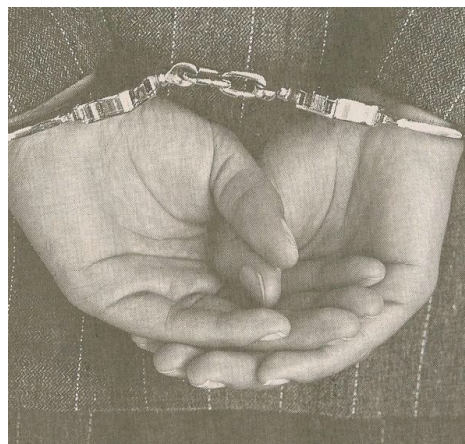
EPA's general approach to enforcement is to place emphasis on those "bad actors". These are people (most often managers and officers of companies) who knowingly violate environmental laws. These are the "most willful violators" whose illegal actions may cause serious potential risk to the public or the environment.



The agencies generally start looking at the top of the corporate ladder. They want to know if any senior managers (including environmental managers) are involved in directing lower level staff to engage in illegal activities. They want to send a clear message to the regulated community. The higher they go up the corporate ladder, the louder the message.

Here are some key points to remember:

- If you operate in a highly regulated industry, you are expected to be knowledgeable about the various environmental regulations governing your operation. In other words, ignorance is NO excuse.
- Falsifying records such as Discharge Monitoring Reports under the Clean Water Act is a felony.
- If you take samples from your wastewater treatment plant on a non-production day and submit the results to the agencies, you are falsifying your records. In effect, you are putting a thumb on the scale in your favor and that thumb is a criminal thumb.
- Also remember that lying to federal investigators during the course of an environment crime investigation is a potential felony.



Civil action and criminal prosecution

The difference between civil and criminal actions is very simple. In a civil action,

your company pays a fine. In a criminal proceeding, someone within your company could go to jail.

Agencies all have their own processes in selecting targets for enforcement. The following sections describe the selection processes used by EPA and the US Department of Justice.

EPA's case selection process

There was an internal memo entitled “The Exercise of Investigative Discretion” — that came out of EPA's Office of Criminal Enforcement dated January 12, 1994. This memo lays out some key factors that the government considers when they decide on whether or not to prosecute an environmental crime case.

The key factors EPA considers in deciding whether or not to prosecute are:

1. Actual harm to the environment through an illegal discharge, release or emission that impact human health.
2. The threat of significant harm to the environment.
3. Failure to report an actual discharge or emission
4. A pattern of illegal conduct or repeat violations
5. Deliberate misconduct such as knowingly operating without a permit.
6. Concealment of misconduct.
7. Falsification of environmental records
8. Tampering with monitoring or control devices
9. Failure to remedy noncompliance after an audit

The EPA memo in its entirety is reproduced in Appendix 6.

The US Department of Justice (DOJ) also has a similar document outlining factors it expects its US attorneys to follow in selecting cases for criminal prosecution. The entire copy of that document is reproduced in Appendix 7.

The DOJ document gives the examples of two companies – Company A and Company Z. A tale of two companies.

Here is what Company A does:

1. It regularly conducts a comprehensive audit of its compliance with environmental requirements.
2. The audit uncovered as information about employees disposing of hazardous wastes by dumping them in an unpermitted location.
3. An internal company investigation confirms the audit information. (Depending upon the nature of the audit, this follow-up investigation may be unnecessary.)
4. Prior to the violations the company had a sound compliance program, which included clear policies, employee training, and a hotline for suspected violations.
5. As soon as the company confirms the violations, it discloses all pertinent information to the appropriate government agency; it undertakes compliance planning with that agency; and it carries out satisfactory mediation measures.
6. The company also undertakes to correct any false information previously submitted to the government in relation to the violations.
7. Internally the company disciplines the employees actually involved in the violations, including any supervisor who was lax in preventing or detecting the activity. Also, the company reviews its compliance program to determine how the violations slipped by and corrects the weakness found by that review.
8. The company discloses to the government the names of the employees actually responsible for the violations, and it cooperates with the government by providing documentation necessary to the investigation of those persons.

According to DOJ, Company A would stand a good chance of being favorably considered for prosecutorial leniency, to the extent of not being criminally prosecuted at all.

At the opposite end of the scale is Company Z, which does the following:

1. Because an employee has threatened to report a violation to federal authorities, the company is afraid that investigators may begin looking at it. An audit is undertaken, but it focuses only upon the particular violation, ignoring the possibility that the violation may be indicative of widespread activities in the organization.
2. After completing the audit, Company Z reports the violations discovered to the government.
3. The company had a compliance program, but it was effectively no more than a collection of paper. No effort is made to disseminate its content, impress upon employees its significance, train employees in its application, or oversee its implementation.
4. Even after “discovery” of the violation the company makes no effort to strengthen its compliance procedures. For example, If the company had a long history of noncompliance, the compliance audit was done only under pressure from regulators, and a timely audit would have ended the violations much sooner, those circumstances would be considered.
5. The company makes no effort to come to terms with regulators regarding its violations. It resists any remedial work and refuses to pay any monetary sanctions.
6. Because of the noncompliance, information submitted to regulators over the years has been materially inaccurate, painting a substantially false picture of the company’s true compliance situation. The company fails to take any steps to correct that inaccuracy.
7. The company does not cooperate with prosecutors in identifying those employees (including managers) who actually were involved in the violation, but it resists disclosure of any documents relating either to the violations or to the responsible employees.

Under these circumstances, leniency by the DOJ is unlikely.

The only positive action by Company Z is the so-called audit, but that was so narrowly focused as to be of questionable value, and it was undertaken

only to head off a possible criminal investigation. Otherwise, the company demonstrated no good faith either in terms of compliance efforts or in assisting the government in obtaining a full understanding of the violation and discovering its sources.

Ask yourself this question: Which company are you? Company A or Company Z?

Based on the discussions above, you are more likely to become a target of criminal prosecution if you meet one or more of the following conditions:

1. History of repeated violations
2. Illegal discharge with identifiable harm
3. Discharge with threat of significant harm
4. Failure to report an actual discharge that has actual or threatened environmental harm
5. Illegal conduct appear to represent a trend
6. Violations caused by deliberate misconduct
7. Concealment of misconduct or records falsification
8. Tempering with monitoring equipment
9. Operating without a permit or manifest
10. There is corporate culpability
11. Failure to remedy noncompliance identified in an audit



Once you understand the thinking behind these enforcement actions, you will have a much better idea of steering away from their target models. You should make a practice of reviewing your operation to see if it meets any of the above 11 conditions and take immediate corrective action if it does.

EPA's Civil Penalty Policy

There are 2 components to EPA's civil penalty policies:

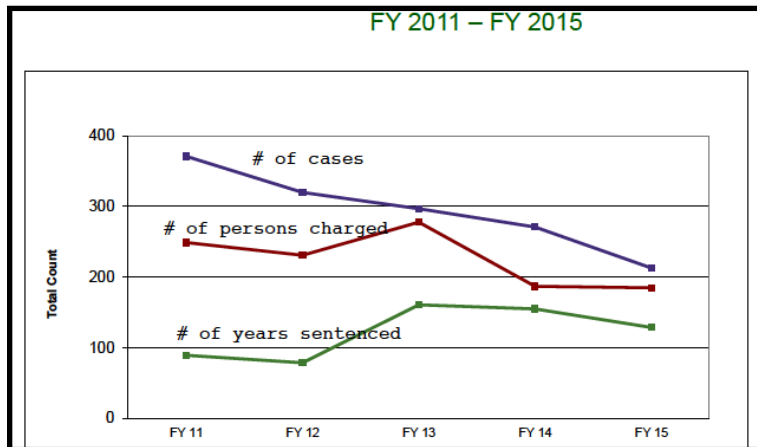
1. Gravity portion. This is determined by the severity of the violation. Penalty can sometimes be "offset" by Supplemental Environmental Projects (SEP). A SEP is a project that benefits the environment. This is an increasingly popular approach. If it is approved by EPA, you would be able to apply some of your cash penalty to such project.

2. Economic benefits portion is designed to level the playing field. For example, if you have avoided shipping your hazardous wastes to a licensed facility for the past 5 years, the agency will calculate the amount of money you have saved by your illegal act and will demand that you pay back such amount in order to level the playing field with your competitors.

Avoiding Perils of Environmental Crimes

EPA's enforcement data over the years shows a relatively small number of environmental crime cases initiated by the federal government.

The fact that less than 300 persons in a year are charged by the federal government leads to the obvious question: Why?



Why are there so few cases at the federal level with hundreds of thousands of companies operating in the country?

There are two answers to this question: 1) many environmental crime cases are prosecuted at the state or county levels and 2) EPA mainly targets

only the most egregious environmental violations.

EPA's internal memo shown above in this chapter shows the federal government looks at several factors before pursuing a case. The first thing they look for is public endangerment. Any illegal activities that impact or have the potential to endanger the general public will be prime candidates for prosecution.

Another factor the agencies often consider is the mindset or behavior of the violator before the violations are commented. Did they intentionally commit money unlawful act in order to save money? Did they receive ample warnings from an agency inspector but ignored the warnings to correct the

violations? All of these factors go into the decision by the federal government on whether or not to file environmental crime charges against a violator.

Always be responsive to an agency inspector's warning and directive to correct a violation — no matter how small that violation may seem at the time. Many large enforcement cases started as minor violations that management ignored and allowed it to fester into a negligent or knowing violation.

Perform internal environmental reviews or audits on a regular basis. The sooner a minor problem is discovered, the less costly it will be to fix.

Just like cancer prevention, early detection of environmental issues is the key here.

Make sure you and your staff have sufficient knowledge of regulations to recognize a festering environmental problem. Employees do not need to be environmental experts, but they do need to know enough to ask the right questions or stop a pending illegal act. That's why you need to provide environmental awareness training to all employees whose work may impact the environment. Ignorance of environmental regulations is no excuse in the agency's eyes.

Always read your permits and understand what they require in terms of operational conditions and recordkeeping. Seek outside help if you are unsure. By the time the inspector is at the facility, it is too late. The inspector is not there to provide you with free consulting advice; he is there to evaluate how you comply with the permit conditions. Chapter 11 discusses agency inspections.

Never ever lie to a federal inspector or provide falsified information to the agency.

Last but not least, always try to develop and maintain a cordial and professional working relationship with the agencies.

Sometimes Less is better

Here is a little teachable moment:

During the French revolution three prominent, but very unfortunate, professionals were condemned to beheading by the guillotine: a priest, a doctor, and an engineer. The three were conveyed to the scaffold together in an old ox cart and were marched up to the guillotine together amidst an amass of cheering blood thirsty spectators.



The priest was the first to meet his fate. The executioner very politely asked the priest if he preferred to avoid seeing the blade fall by lying face down rather than face up. The priest replied, "I've led a good life, have nothing to regret, and want to meet my maker face-to-face." So the priest lied down facing the blade. The executioner pulled the cord releasing the blade and it plummeted toward the priest's exposed neck. But within a half inch of reaching its fatal destination the blade stopped literally in its tracks. The crowd roared with delight and many of the onlookers fell to their knees in prayer. Not wanting to put any victim to double jeopardy the authorities released the priest, to the great delight of the crowd.

Then came the doctor's turn. He was asked the same question and thought "if it worked for the priest maybe it will work for me too," so he requested to take the blade face up. Again the blade stopped a half inch from the target, and as with the priest, the authorities released the doctor.

Now it was the engineer's turn and, being no one's fool, he also opted to take the blade face up. As he was laying down with his neck firmly placed in the crook of the guillotine and looked up to his maker, and to the blade, he exclaimed, "Ooh, I think I see your problem."

Moral of the story: Only answer the question that's asked, and don't volunteer information, your neck may be at stake.

Setting Up an Early Warning System

If you are the person who is responsible for your company's environmental management program, you carry certain personal liability. For example, if EPA were to find out or suspect that someone within your organization has falsified your Discharge Monitoring Report (DMR) under the Clean Water Act, who do you think will be the first person the agency wants to interview? What will be your response to the enquiry? What will you say to the federal investigator?

To minimize your own personal liability, it is important for you to understand all the requirements and the enforcement process.

Try to look at enforcement from the agency's viewpoint. In other words, understand how the agencies select their targets. And remember that your response to the agencies will often determine their responses to you.



This is particularly true in the case of agency inspection. Always cooperate with the agencies while protecting your rights. A good place to start is to have a set of clearly defined environmental procedures so that your employees know how to behave before, during and after an agency inspection. They also need to understand how to manage their records.

Understand that as an environmental manager, you do have certain specific responsibilities and the agencies expect you to carry them out lawfully.

If you are negligent in your duties and something bad happens, you may be held personally accountable. Let's say you have personal knowledge that an aboveground storage tank storing some very hazardous chemical has some structural instability problems. The base of the tank is showing signs of severe corrosion. When that tank collapses a few weeks later and fatalities or severe environmental damage occur, the agency will want to know why you fail to take action. The agency will want to know if anyone within your organization directed you not to take action or perhaps you have decided upon yourself to keep this known defect secret. You may be held liable as a result of the investigation.

If someone has falsified your DMR, the agency will want to know how that happened under your watch since you are the person responsible for the company's environmental program. They will want to know if you played a role - directly or indirectly - in the illegal act.

What you need to have is an Early Warning System to protect you.

The Early Warning System is very simple: As the environmental manager within your organization, you want to pay special attention to what your employees say and do when it comes to compliance issues. If someone within your organization – especially someone at a more senior level than you are - makes some suggestions to you that you know to be in violation of some environmental regulations, it is your responsibility to voice your objections forcefully and immediately.

You are the environmental watch dog.

Let those around you know that you will not be party to any kind of “conspiracy” to commit an environmental crime. Let your supervisor know immediately. If your supervisor is the person suggesting such illegal activities, work your way up the organization until you find someone who will listen to you and will take action. Alert your organization's legal counsel and make sure you have documented proof (with date and time) that you raised such objections.

Remember this: your silence can often be taken to mean acquiescence.

Pay close attention to emails and memos that come across your desk. If you see any evidence of deviation from compliance, you need to stop the illegal thinking process immediately and steer the ship back to the right course.

Ignore those people within your organization who tell you that you are “rocking the boat” or not being a “good team player” because you are being vigilant. These people are wrong and they do not have your best interests at heart. They certainly do not care about your personal liability.

One final piece of advice: When it comes to environmental compliance in the corporate setting, NEVER go along to get along. That is a recipe for disaster.

Here is an example from EPA's website:

“A plant manager at a metal finishing company directs employees to bypass the facility's wastewater treatment unit in order to avoid having to purchase the chemicals that are needed to run the wastewater treatment unit. In so doing, the company sends untreated wastewater directly to the sewer system in violation of the permit issued by the municipal sewer authority. The plant manager is guilty of a criminal violation of the Clean Water Act.”

If you are the environmental manager and you go along with this plant manager's decision, you could very likely be prosecuted as well.

Here is a real life example of why bad things happen to bad people.

A refinery in Louisiana was fined \$12 million by EPA last year. It was the largest criminal fine under the Clean Air Act. The refinery had a Title V air permit and was found to have illegally released hydrogen sulfide from its flare gas.

The pilot light in the flare stack was not operational. Management ignored repeated warning and directive from the state agency to repair the pilot light and instructed staff to buy a flare gun from a Wal-Mart store and fire at the flare gas to ignite it. The refinery also improperly repaired pollution

monitoring and control equipment and stored oil in damaged tanks whose floating roofs had collapsed. The company had no environmental budget and no environmental staff.



The top prize was the use of children's plastic swimming pools from Wal-Mart as secondary containments for leaky oil pipes.

The president and general manager of the refinery has pleaded guilty to two

felony counts of “placing persons in imminent danger of death or serious bodily injury”. He could be facing a year in prison.

5. Managing Environmental Risks and Hazards

There are many risks around us as we wake up in the morning and go to work. There is the risk of car crashes as we drive along the freeway. We also have the risk of buildings falling down during an earthquake. When we get on the plane, there is always the risk that some terrorists may hijack our plane.



Society has taken certain actions to manage these risks. We establish speed limits and impose traffic rules to minimize the chance of cars crashing into each other. We require buildings to meet certain codes to keep them from collapsing during an earthquake. We created the Transportation Safety Agency to screen all passengers going on planes. All of these actions are part of risk management.

Companies also manage risks at various levels. For example, corporate risk managers work with insurance companies and fire departments to reduce the risk of their factories burning down. Safety managers set up machine guards to prevent amputations. They establish lockout/tagout procedures to reduce the risk of employees being electrocuted.

Environmental Risks

What about the environmental managers? How should we go about managing environmental risks?

The first thing we need to recognize is that environmental risks involve more than the risk of being fined by the government for permit violations.

We as environmental managers need to think outside the box.

We need to embrace change. Always be suspicious when somebody says “we have always done it this way” as a reason to resist change.

The old adage: “If it ain’t broke, don’t fix it” is true only up to a certain point. If we had taken this adage to heart during the horse and buggy days, we would still be riding to work in a horse drawn buggy because the buggy was never broken. It got us from point A to point B most of the time.

To think outside the box, we should look at chemicals that we use at the factory and ask these questions:

1. What are the risk to our workers when they use these chemicals?
2. What risks do these chemicals pose to the environment if they are spilled?
3. Are we storing too much of these chemicals on site at any given time?

We should look at the amount of hazardous wastes that we store onsite and ask the following questions:

1. What are the environmental risks associated with storing all those highly ignitable hazardous wastes on-site even though they may be within the legal limits of 90/180/270 days?
2. Should we ship them out more frequently so as to reduce the risk of fire and spillage onsite?

These are all important environmental risk management questions we as environmental professionals need to ask ourselves.

When we do an environmental audit, we should never rely solely on a simple checklist. We should look around us and try to recognize risks. For example, if we see a deteriorating water tank right next to a transformer substation, a flashing red sign saying “HIGH RISK” should light up in our heads. We should immediately recognize that risk because when that water tank collapses, our factory will be out of commission for a long time.

Another example to consider environmental risk management relates to chemical reformulation. There is a simple reason why air regulations are constantly reducing the allowable amount of Volatile Organic Compound (VOC) in our cleaning solvents. The regulatory agencies are trying to encourage industry to switch to a more environmentally friendly solvent. Reformulation is an excellent way to reduce environmental risks.

Many paint shops have escaped the clutches of Title V air permits simply by reformulating their paints. They now use paints that contain much less Hazardous Air Pollutants and VOC and that takes them below the Title V permitting threshold. So by getting out of Title V permitting system, they significantly reduce the risk of citizen lawsuits and running afoul of Title V's onerous compliance certification requirements.

The last and very important way to reduce our environmental risks is to make sure that all our employees receive the proper training that they need so that they know what to do in case of an emergency. They need to know enough to ask the right questions or to ask for help. They also need to know why they are doing the things that they do and not just because someone told them. A good auditor will always look for answer to this question: "How will they deal with it when something really bad happens?"

That is the ultimate test for environmental risk assessment and it should be on the mind of every environmental manager.

Environmental Hazard Analysis

As environmental professionals, there is much we can learn from our colleagues on the health and safety side.

An essential part of an effective health and safety program is Job Hazard Analysis. The purpose of such as program is to identify safety issues that may be present during the performance of a specific job. The job hazard analysis takes the form of a series of five questions:

1. What can go wrong?
2. What are the consequences?
3. How could it happen?
4. What are other contributing factors?
5. How likely is it to happen?

For example, if you were to perform a job hazard analysis at a job where an operator is working with a stationary rotating blade, you would ask the question "What can go wrong?". The operator's sleeve could get caught by the rotating blade. What are the consequences? His arm or wrist could be amputated. How could it happen? There are no machine guard to prevent

such accident. What are other contributing factors? The operator may be fatigued due to long working hours. He may be careless and not paying attention to the blade. He may be wearing loose clothing. Or he may be distracted by talking to his fellow employees while the blade is turning. How likely is it to happen? Without machine guards or other forms of engineering control, such accident is likely to happen sooner rather than later.



You can apply the same job hazard analysis approach to your environmental program. Let's call it environmental hazard analysis. Here are a couple of examples:

Example 1: You walk through the plant and you notice that there are some severe signs of corrosion at the base of one of your aboveground storage tanks where you store some pretty hazardous chemicals. You ask the five questions:

What can go wrong?	The structural integrity of the tank can fail.
What are the consequences?	The tank could rupture and cause a massive spill of hazardous chemical.
How could it happen?	The tank could fail if no action is taken to address the corrosion of the tank.
What are other contributing factors?	Strong wind, minor earthquake or any external forces on the tank could contribute to its structural failure.
How likely is it to happen?	It is likely to happen if nothing is done.

Example 2: You are reviewing your plant's Spill Prevention Control and Countermeasures (SPCC) plan and notice that there is no record of any inspection being carried out even though the plan calls for weekly inspections.

You proceed to ask the five questions:

What can go wrong?	The SPCC plan is not being implemented as planned.
What are the consequences?	Spills could have occurred without anyone noticing it. An EPA inspector may issue a citation against your plant for failure to implement it.
How could it happen?	The inspection team was not made aware of the weekly inspection requirement.
What are other contributing factors?	The people responsible for implementing the plan were not involved in its development. There is a lack of ownership. There is a failure of communication.
How likely is it to happen?	The failure to implement the plan is likely to happen if employees are not properly trained and involved in the development of the plan.

Example 3: You notice that there are drums of hazardous waste in your central storage area that do not have the proper labels on them. The ones with labels do not have accumulation start dates. You ask the five questions.

What can go wrong?	You can exceed your maximum storage time limit without knowing about it.
What are the consequences?	You could be fined for operating a hazardous waste facility without a permit if an inspector finds out.
How could it happen?	The operator had not been told about the labeling requirements.

What are other contributing factors?	There is no one individual responsible for making sure the label is on the container and it is properly filled out. The weekly inspection has not been carried out or it has not been done properly.
How likely is it to happen?	It is very likely to happen.

This simple environmental hazard analysis - fashioned after OSHA's Job Hazard Analysis - can help you identify small environmental problem before it festers into a much larger and more costly one. Once you have determined that the problem is likely to happen, you need to take immediate steps to correct it.

This process is similar to doing an internal environmental audit. There is no point in doing an audit unless you have the management commitment and financial resources to fix the problems you uncover.

A Case Study

Here is a real life example of what happened to a company that failed to do proper hazard analysis. It involved combustible dust.

The National Fire Protection Association defines a combustible dust as any finely divided solid material that is 420 micron or smaller in diameter and presents a fire explosion hazard when dispersed and ignited in the air. One of the most frequently neglected safety and environmental concerns is the accumulation of fine dust particles at the workplace which can become combustible and pose serious fire hazard.

Combustibility depends on many factors, such as the shape, moisture or content of the particle. Depending on these factors particles larger than 420 microns can still pose a fire hazard. Combustible particles exist in many industries such as food manufacturing (Candy, sugar, starch, flour and feed), woodworking, metal grinding, textile, dye, coal , etc. Most synthetic organic material can also form combustible dusts.

Normally noncombustible material can be transformed into combustible dust. A common sequence of events starts with a primary explosion near a collection of fine particles which then triggers a massive secondary explosion as the primary explosion ignites the fine particles that have been floated.

On February 7, 2008, a series of sugar dust explosions occurred at a major sugar refinery facility in Georgia that resulted in 14 deaths and 36 injuries. The US Chemical Safety Board conducted an investigation of the incident.



They concluded that the accident was the result of a dust explosion that started in an enclosed conveyor belt located below three silos containing granulated sugar.

As the granulated sugar was transported on the conveyor belt to the processing plant significant sugar and sugar dusts had accumulated inside the conveyor

belt and in the surrounding areas.

The board concluded that an unknown source of ignition ignited the sugar dusts. The initial explosion lifted more sugar dusts that had accumulated on the floors. The secondary explosions destroyed the packing buildings, the refinery and loading areas. Pressure waves from the explosion lifted 3-inch thick concrete floors and collapsed brick walls along the way. The structural damage blocked stairwells and other escape routes causing numerous fatalities. The fire in the building was put out in a day but the granulated sugar fire in the 105 feet tall silos simmered for more than a week.

The company had enclosed the conveyor belts carrying the raw sugar in order to contain the sugar test. The unintended consequence of this act was that the confined space inside the enclosed area was small enough to cause the dust to exceed the minimum explosive concentration. Electric motors throughout the facility were covered with sugar dust. Any one of

these motors or any heated surface could have been the ignition source of the primary explosion.

There was a dust collection system in place but it was in disrepair and other dust equipment was undersized or incorrectly installed. In general housekeeping was not good at the facility prior to the explosion.

The investigation revealed that plant management have been made aware of the danger of combustible dust explosion as evidenced by owner internal inspection's and office communications.

However hazard analysis was never done properly. The main lesson from this tragedy is that housekeeping is paramount and should have been part of the hazard analysis in a facility that has significant combustible dust. Another fatal error was that management failed to act on internal audit findings which had addressed the problem with the collection system.

If your manufacturing process generates a significant amount of dust, you need to be vigilant in making sure that there's no excessive accumulation. Dust collection system must be properly sized and maintained in good working conditions.

6. Managing your Environmental Data

Are you drowning in environmental data while starving for Information?

An article in the Harvard Business Review entitled “IT Doesn’t Matter” generated a lot of discussions and an enormous amount of controversy. IT stands for Information Technology. The premise of the article is that information technology is becoming less relevant as a strategic management tool because it has become more accessible and affordable to all.



The author argues that since every corporation is deep into IT, no one company can gain any significant strategic advantage by embracing it. In other words, IT has become a commodity. It has now become a necessary but insufficient condition for excellence.

A natural outcome of the Information Technology age is the ease of collecting massive amount of data. As a result, we often find ourselves drowning in data while starving for information! This chapter discusses some practical ways of managing your environmental data and how best to get the most information out of such data.

Collecting data is relatively easy to do but it does come with a cost. Mistakes in data collection can lead to disastrous results.

A classic example of data collection run amok is Total Quality Management (TQM) – an excellent management concept of “doing it right the first time”. In the 1990s, TQM was all the rage. Large and small corporations were embracing it. Unfortunately, many TQM administrators began to demand their employees fill out endless forms to document and justify every decision as part of the TQM process. It got to the point where employees were spending so much time in filling out forms and preparing internal reports that nothing else was being done. The data collection system eventually collapsed on its own paper weight.

People were collecting data for the sake of collecting data and not analyzing the data to improve management practices. They were literally drowning in data but starving for information. Once senior management discovered such waste of resources, TQM program was shut down and the administrators laid off.

Getting Information Out of Data

It is a lot easier to collect data than to analyze them.

Many years ago, a consulting firm received a multi-million dollar contract to work on a large Superfund site in California. The previous consulting firm had installed about 100 monitor wells on site and were collecting massive amount of groundwater quality data. There were reams of computer printout data showing waste solvent concentrations at varying depths at each well over an extended time period. Yet no one had ever bothered to sit down and analyze the data as they were being collected to determine what they mean. One reason was that the consulting firm was making a lot of money by hiring a lot of low level employees to collect data. The data kept rolling in from the field.

The Superfund site was drowning in data but starving for information.

The new firm was then hired to make sense of the data – to interpret the groundwater contamination data to see in which direction the waste solvent was migrating in the aquifer. Its job was to provide the clients with useful information so that they could go and negotiate a settlement with EPA on how best to remediate the site. It became clear later the previous firm kept on collecting data. It was much more profitable (translation: more billable hours) to have a large team of technicians out in the field generating data than to have a small team of scientists analyzing them.

There is certainly no shortage of data in the environmental field. Every environmental permit requires the permit holder to collect some form of data or another. If you have a wastewater discharge permit, chances are that you are required by law to collect daily flow data, weekly effluent concentrations and calculate monthly averages of various chemical constituents in your waste stream.

If you generate hazardous wastes, you are required by law to record how much of what wastes you ship out to a Treatment Storage and Disposal Facility (TSDF).

If you have a major air permit, the government requires you to collect data on how many tons of HAPs (hazardous air pollutants) you send up the



stack. Every July 1 of each year, many facilities are required by federal law to tell EPA how much chemicals they used, processes or manufactured in the preceding year and how much of the chemicals were “released” to the environment. This is the so-called Toxic Release Inventory (TRI) Report (or better known as Form R).

The questions facing environmental managers are: How can they make the best use of the data that are required by law to collect? How can they benefit from such data? What useful information can they get out of these data?

Let’s start with the often misused (by environmental zealots) and misunderstood (by the media) TRI database. A great majority of the data contained in the TRI database is based on legally permitted emissions and/or recycling activities. Yet they are all generically termed as “release to the environment”.

That’s why every year the public reads about XYZ company being the “largest” polluter in the county because it “releases” so many tons of toxic chemicals to the community giving the erroneous impression that the company is poisoning the community even though all releases are legally permitted. Leaving this injustice behind, you should review the raw data that you use to compile your TRI report and determine how effectively you have been recycling your wastes offsite and how well you have controlled your air emissions. Use your own TRI data as a basis for your internal audit or review of your operations. If you are planning on acquiring a company, the EPA’s TRI data base can be one of many data bases you use for your due diligence.

The EPA also compiles a large database on the hazardous waste activities nationwide based on the hazardous wastes generation reports that all large quantity generators send in every even-numbered year. These biennial reports – downloadable from the EPA’s website - can give you a lot of information. The latest available database can be downloaded from the website. It can tell you who have been shipping what type of hazardous wastes to which TSDF. Once you have downloaded the data into your computer, you can import it into a relational database program such as Microsoft Access and analyze the data.

One of the main reasons why you want to know who ship what wastes to a site that you are considering is to avoid shipping wastes to a site that receives most of its wastes from small companies.

If the site turns into a Superfund site and those small companies go out of business, your company will be forced to bear their shares of the cleanup cost under the “joint and several liability” clause of CERCLA. The joint and several liability means each PRP (Potentially Responsible Party) associated with the Superfund site can be held individually responsible for the entire cleanup cost of the site. So that’s why you need to choose a site that has many financially viable PRPs in order to minimize your potential liability.

Use the air emission data you collect under your air permit to tell you how much VOCs and HAPs (Hazardous Air Pollutants) are being emitted. Here are some practical ways you can make use of them.

Use the information to see how much reformulation of your solvents you need in order to come below the threshold of NESHAP (National Emission Standards for Hazardous Air Pollutants). If you emit more than 10 tons per year of a single HAP or 25 tons per year of any combination of HAPs, you come under NESHAP which requires your facility to meet MACT (Maximum Achievable Control Technology) – another set of stringent emission standards under the Clean Air Act.

After reviewing their environmental data, some companies have reformulated their paints to reduce their HAPs emission and are able to opt out of the stringent requirements under the Title V and NESHAP programs.

Look at the wastewater data you have collected under your wastewater discharge permit. Develop a time chart and look for trends or irregularities. Put your data on a spreadsheet and develop a historical correlation between waste loadings and production level. Very often a significant deviation in the spatial (time related) data trend or a sudden change in the production/waste correlation ratio will point to some malfunction somewhere upstream in the production process.

It may indicate a significant leakage within your collection system or some wastage of raw material. Since you are legally required to collect such data (such as daily flow, daily concentrations, etc), you might as well make the most out of it. It could end up helping you improve your source reduction or waste minimization programs and save your company some money.

Data Management

A few words here about data management. As seen earlier, collecting data is a relatively simple task. Trying to figure out what to do with the data is a different matter. The key to getting useful information out of your data is good data management. And the key to good data management is to make sure you have ownership of your own data.

You can't analyze what you don't have available to you.

Do not hand over your data to an outside firm to "manage" them for you. Here is a nightmare scenario that is all too common: You pay an outside firm to collect environmental data for you. The firm puts your data on its proprietary data system and holds on to it. Every time you need access to your data, you have to pay the firm again to retrieve it. Even worse, when you decide to switch firm, you have to pay the existing firm to download your data and the new firm to upload it.

According to a project manager at a California based firm that designs environmental data management systems for its clients to operate themselves – "there is a very strong desire from both public and private firms to consolidate environmental data under the owner's control". Many of her clients have "horror stories" of having to pay consultants to get back their own data or not being able to get the data at all.

If you feel a need to customize your computer database, make sure someone within your organization knows how to run it after it has been customized. If an outside consulting firm is collecting environmental field data for you, insist that the data be stored in a format that is compatible with your own system. And insist on getting the data transferred to your system.

This is the only way to keep from being held hostage by your consultants.

The last thing you want is to be totally dependent on some outside contractor to tell you what data and information you have on a day-to-day basis. It can get very expensive – dollar-wise and knowledge-wise.

Computerizing your entire environmental program can be a very daunting task. There are many firms out there that will sell you software to digitize every conceivable bit of information. They will sell you canned audit software that requires you to digitize your entire collection of environmental data. Be very weary of these people. Many environmental managers have been turned into data entry clerks feeding meaningless data into a monstrous software program.

Understanding “environmental Sustainability”

There has been much talk over the past few years about environmental sustainability. Everyone is talking about it. Conferences are held on environmental sustainability. There are hundreds of definitions of sustainability and yet no one seems to understand what it really means. So-called experts are coming up with “metrics” and “indices” as new ways to measure sustainability and none has universal acceptance.



Sustainability is the new environmental buzzword of this decade.

According to EPA, sustainability is based on a simple principle: “Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations”.

What this definition says is that as we make our products, we should make sure that there is as little net negative impact on the environment as possible. A good example to illustrate this concept is to look at our savings account in the bank. If we have \$1000 in the bank and it pays 3% interest a year, the sustainable way to manage this bank account would be to spend no more than \$30 a year. This will preserve the principal. On the other hand, if we were to draw down the principal amount by spending more than \$30 a year, we would deplete the account over time and there would be nothing left for our children. It would not be a sustainable practice.

Think of nature as one gigantic bank account. As we make our products, we need to make sure that the rate at which we take something away from nature is no faster than nature's own rejuvenation rate. For example, if we discharge too much pollutants to a river, the river may not be able to assimilate the pollutants in time and the net results would be a depletion of dissolved oxygen in the water followed by fish kill. The river in this example is not being sustained and the practice of discharging pollutants into this river at such high rate is not sustainable.

This concept of "sustainability" is not new at all. Regulatory agencies' permitting programs have been taking sustainability into account for years.

This is exactly what a permit writer does.

In fact, the entire premise behind permitting is sustainability. The amount of pollutant you are allowed to discharge into a stream under a permit is entirely dependent on the assimilative capacity of that stream. Your permit conditions demand that. If there are too many sources of pollution going into a particular water body that is under stress, the Clean Water Act requires that a waste load allocation scheme be set up to regulate how many sources can discharge how much pollutants into that body of water. In other words, you either eliminate it, manage it or transfer it.

The Clean Water Act of 1972 also requires the governor of each state to develop water quality standards that are designed to protect existing designated beneficial uses and prevent degradation of the nation's navigable waters. That is sustainability in its purest form!

On the air side, if we wish to build a new power plant in a non-attainment area (i.e., where the National Ambient Air Quality Standards are not being met at the time), the agency will require us to “offset” our new pollutant by removing more than the new amount from an existing source under the Clean Air Act’s New Source Review Program. For example, if we wish to emit 1000 tons of new soot into the atmosphere in Los Angeles, we would have to either purchase an existing plant that is currently emitting 1500 tons of soot and shut it down or purchase emission credit in the open market. That’s the Clean Air Act’s way of ensuring sustainability. You must remove from the existing inventory more pollutants than what you are planning to emit.

If we plan to build our new power plant in a city where the air is clean (an attainment area), we would have to get a PSD (Prevention of Significant Deterioration) permit from EPA to demonstrate that our new power plant will not jeopardize the attainment status under the Clean Air Act. We will have to put in the most advanced pollution control equipment to do that and demonstrate through computer modeling that the new plant would not cause the area to be re-classified as non-attainment. That’s another example of sustainability.

The above examples also illustrate the two main pillars of environmental sustainability, namely, “waste minimization” and “pollution prevention”. These concepts have been around for years as well! Every manager knows that if he can find a way to make his products by generating less wastes and causing less pollution, he will save money in the long run.

The BP oil spill in 2010 was a classic failure in pollution prevention on a massive scale. If the oil industry had spent a fraction of the billions of dollars it spent in perfecting deep sea drilling technology on pollution prevention, that oil spill might not have happened.

Years ago, the canning industry converted from making three-piece cans with lead soldered side seams to making two-piece cans with water-based sealing compound for the same sustainability reasons. The water-based sealing compounds generates no hazardous wastes and the whole process causes a lot less pollution and less environmental health risks to consumers. That was done many years ago.

If you are doing a decent job in waste minimization and pollution prevention, you are well on your way to environmental sustainability. You don't need any fancy three-dimensional charts or metrics to tell you that. Nor do you need a Sustainability Officer to tell you that either.

So the next time someone asks if you are practicing "environmental sustainability", tell him about what you are doing in waste minimization and pollution prevention and how you are meeting your permit conditions.

Or ask him: What else is new?

Myths about Environmental Indices

There is this axiom that says: "If you can't measure it, you cannot manage it". That is true to a certain extent. But the flip side of this axiom is that if you measure the wrong thing, you can end up with a disaster.

There is a big refinery in the US that offers a classic case in point. After its corporate office acquired another major refinery in the 1990s, senior management ordered a significant budget cuts across the board. This impacted the maintenance budgets in all of its refineries. At the same time, the CEO instituted personal safety measures throughout the company. One well known example was that all employees must carry their hot beverages in closed cups. This was to avoid scalding of employees from spilled hot liquid.



The company also instituted a "Getting Health, Safety and the Environment Right" policy - known as GHSER.

The company started tracking OSHA incident rates as a key safety metric at its refineries. However it did not track Process Safety Management key performance indicators such as closure of action items, equipment inspections, and relief valve testing. These were not incorporated into the GHSER.

At one of its refineries, the OSHA incident rate was very low in the years leading to 2005. At the same time, equipments were in a continuing state of

deterioration due to the reduction in maintenance budget. Personnel working with the equipment at the refinery sensed that a major accident was about to happen any time. In 2005, a production unit at the refinery exploded and killed 15 persons and injured hundreds.

Management thought plant safety was doing fine based on the personnel injury rate. It was measuring the wrong metric and ignoring others.

Many companies track performance using metrics such as kilowatt-hour, water consumption and wastes generated per unit of production. These indices can be very helpful as a trend line within a specific production unit over time. They can provide managers valuable information on how well the unit is working over time. Any deviation from the normal trend line will alert operational staff to look for underlying problems.

Unfortunately, these indices are not very useful when they are applied across the board to different productions at different locations.

Yet some managers make the mistake of grouping all these indices and distilling them into one single number and try to rank a company's overall environmental performance based on such singular index. They call them "green index" or "compliance index" with the notion that a company with a higher green index is performing better than others based on some hypothetical and arbitrary environmental ranking scale.

Such practice is misleading and can be downright dangerous. A company's environmental performance comprises many varying factors. To assign a single value or index to represent a company's environmental performance would be akin to the three blind men describing an elephant by touching different parts of the beast. One describes the elephant as a long thick hose; another describes it as a solid stump and the third describes as a piece of large flapping fan.

They are all correct in parts and all wrong with the complete picture.

The impetus of condensing environmental performance into a single index comes from consultants who are trying to sell services to customers in the guise of "making life easier" for their clients. So they concocted these numbers which are misleading and not very useful. There was one young consultant in Canada who suggested that these single digit indices would

help an environmental auditor. The auditor could just review these indices instead of having to review reams of raw data and reports. That was one consultant who has no idea on how to perform an environmental audit.

There are also software vendors out there who promote complicated programs that purport to provide environmental indices in the guise of “efficiency”. Very often, we find the purchasers of these software programs being reduced to data entry slaves or they are tied into long term maintenance contracts. This is a clear case of “Caveat Emptor”.

7. Doing Environmental Audits

Environmental audits are tools that you can use to verify your compliance status and evaluate your ability to deal with future problems.

EPA's Environmental Audit Policy of 1986

In 1986, EPA developed its first environmental audit policy. The entire text is reproduced below:

Environmental auditing is a systematic, documented, periodic and objective review by regulated entities of facility operations and practices related to meeting environmental requirements. Audits can be designed to accomplish any or all of the following: verify compliance with environmental requirements; evaluate the effectiveness of environmental management systems already in place; or assess risks from regulated and unregulated materials and practices.

An organization's auditing program will evolve according to its unique structures and circumstances. The 1986 Policy acknowledges this fact, and also states EPA's belief that effective environmental auditing programs appear to have certain discernible elements in common with other kinds of audit programs. EPA generally considers these elements important to ensure program effectiveness. This general description of effective, mature audit programs can help those starting audit programs, especially Federal agencies and smaller businesses. Regulatory agencies may also use these elements in negotiating environmental auditing provisions for consent decrees. Finally, these elements can help guide states and localities considering auditing initiatives. As stated in the 1986 Policy, an effective environmental auditing system will likely include the following general elements:

I. Explicit top management support for environmental auditing and commitment to follow-up on audit findings.

Management support may be demonstrated by a written policy articulating upper management support for the auditing program, and for compliance with all pertinent requirements, including corporate policies and permit requirements as well as Federal, state and local statutes and regulations. Management support for the auditing program also should be demonstrated by an explicit written commitment to follow-up on audit findings to correct identified problems and prevent their recurrence.

II. An environmental auditing function independent of audited activities.

The status or organizational locus of environmental auditors should be sufficient to ensure objective and unobstructed inquiry, observation and testing. Auditor objectivity should not be impaired by personal relationships, financial or other conflicts of interest, interference with free inquiry or judgment, or fear of potential retribution.

III. Adequate team staffing and auditor training.

Environmental auditors should possess or have ready access to the knowledge, skills, and disciplines needed to accomplish audit objectives. Each individual auditor should comply with the company's professional standards of conduct. Auditors, whether full-time or part-time, should maintain their technical and analytical competence through continuing education and training.

IV. Explicit audit program objectives, scope, resources and frequency.

At a minimum, audit objectives should include assessing compliance with applicable environmental laws and evaluating the adequacy of internal compliance policies, procedures, and personnel training programs to ensure continued compliance. Audits should be based on a process which provides auditors: all corporate policies, permits, and Federal, state, and local regulations pertinent to the facility; and checklists or protocols addressing specific features that should be evaluated by

auditors. Explicit written audit procedures generally should be used for planning audits, establishing audit scope, establishing audit scope, examining and evaluating audit findings, communicating audit results, and following-up.

V. A process that collects analyzes interprets and documents information sufficient to achieve audit objectives.

Information should be collected before and during an on-site visit regarding environmental compliance (1) environmental management effectiveness (2) and other matters (3) related to audit objectives and scope.

This information should be (a) sufficient, (b) reliable, (c) relevant and (d) useful to provide a sound basis for audit finds and recommendations.

(a) Sufficient information is factual, adequate and convincing so that a prudent, informed person would be likely to reach the same conclusions as the auditor.

(b) Reliable information is the best attainable through use of appropriate audit techniques.

(c) Relevant information supports audit findings and recommendations and is consistent with the objectives for the audit.

(d) Useful information helps the organization meet its goals. The audit process should include a periodic review of the reliability and integrity of this information and the means used to identify, measure, classify and report it. Audit procedures, including the testing and sampling techniques employed, should be selected in advance, to the extent practical, and expanded or altered if circumstances warrant. The process of collecting, analyzing, interpreting and documenting information should provide reasonable assurance that audit objectivity is maintained and audit goals are met.

VI. A process that includes specific procedures to promptly prepare candid clear and appropriate written reports on audit finds corrective actions and schedules for implementation.

Procedures should be in place to ensure that such information is communicated to managers, including facility and corporate management, who can evaluate the information and ensure correction of identified problems. Procedures also should be in place for determining what internal findings are reportable to state or Federal agencies.

VII. A process that includes quality assurance procedures to assure the accuracy and thoroughness of environmental audits.

Quality assurance may be accomplished through supervision, independent internal reviews, external reviews, or a combination of these approaches.

On July 28, 1994, EPA expanded on its auditing concepts in the Federal Register. The following are some highlights:

Explicit Top Management Support

There must be written policy articulating upper management support for the auditing program. Its stated purpose is to comply with all Federal, state and local regulations and corporate policies.

Auditing function must be independent of audited activities

There must be objective and unobstructed inquiry, observation and testing. Auditor's objectivity should not be impaired by personal relationships, financial or other conflicts of interest. There should not be any interference with free inquiry or judgment and no fear of potential retribution from management.

Audit team must be adequately staffed and trained

Auditors should have the knowledge, skills, and disciplines needed to accomplish the audit objectives. Each individual auditor should comply with the company's professional standards of conduct. The auditors, whether full-time or part-time, should be competent and trained to conduct the audit. This is critical to the success of any environmental audit.

If you work for a multi-national corporation, be weary of financial auditors masquerading as environmental audits without first being trained on the basics of environmental regulations and issues. This happened once to a Fortune 500 company with offices worldwide. It has a large internal auditors who travel around the world auditing financial records. The head of the auditing department decided one day to provide his financial auditors several environmental and safety checklists and asked them to do environmental and safety audits after finishing the financial audits. It turned out to be a total disaster because those accountants had no idea what to look for and did not know what questions to ask.

Explicit audit program objectives, scope, resources and frequency

Objectives of the audit should be to assess compliance with applicable environmental laws. An audit should also evaluate adequacy of internal compliance policies, procedures, and personnel training programs to ensure continued compliance. There should be explicit written procedures used throughout the audit starting from planning through to reporting and following up.

An effective analytical system to ensure data quality

The audit must have a process that collects, analyzes, interprets and documents information. The procedures should include a periodic review of the reliability and integrity of the information collected. There should also be procedures set up to identify measure, classify and report audit results.

There must be procedures in place to assure accuracy and thoroughness of environmental audits. For example, quality assurance may be accomplished through supervision, independent internal reviews, external reviews, or a combination of these approaches.

Reporting and Taking Corrective Actions

There must be procedures for reporting and taking Corrective Actions. These procedures must ensure that the audit results are communicated to facility and corporate management and that correction of identified problems is carried out. There should be a mechanism to determine what internal findings from the audit are reportable to state or Federal agencies.

EPA Self-Disclosure Policy

In order to encourage internal self audits, EPA created its self-disclosure policy which came into effect on January 22, 1996. It states that if all nine of the following conditions are met, EPA will waive all civil penalties:

1. Systematic discovery.
2. Voluntary discovery within 21 days.
3. Prompt disclosure.
4. Independent of government or third party action.
5. Correct and remediate.
6. Agrees in writing to prevent recurrence.
7. No repeat violations.
8. Excludes violations that resulted in serious or imminent and substantial endangerment to human health or the environment; or violates terms of an agency order or consent agreement.
9. Must cooperate with agency.

To qualify, there must be a regularly scheduled program of internal audits. The internal audits cannot be a result of a legal settlement with an agency or a regulatory requirement. The company has 21 days to disclose any violations to EPA.

Under the policy, EPA will reduce penalty by 75% if all but the first conditions are met. It will forego criminal prosecution unless corporate officials or managers are “consciously involved or willfully blind to the violations”. California EPA also has a self-disclosure policy similar to EPA’s. See Appendix 6 for details.

Benefits of Environmental Audits

The major purpose of an environmental audit program is to systematically search for noncompliance and correct them before they cost the company more money.

If you discover some serious problems in your self audit and you fail to take corrective action in a timely manner, the agency can cite you for negligence

NEVER do an audit UNLESS you are prepared to fix any uncovered problems in a TIMELY fashion. Or else you will have a smoking gun in your hand!

and knowing violations when something bad happens. Learn from [BP's mistake](#) in not following through on its own internal audit results.

There are also instances when an independent auditor may find himself in a precarious situation if his client is engaged in illegal activities. There are no federal laws that require an auditor/consultant to “turn in” his client for uncovered violations. But there may be other professional and ethical obligations as well as liability issues for the auditor. Chapter 13 discusses such a situation.

Internal v. External Audits

In general, internal audits are less expensive to do. They give you more control over the process and can be done more frequently using your own staff. However, internal audits are less objective and may provide you with less protection in terms of attorney/client privilege.

There are many benefits you can get out of doing an internal audit. Here are some examples:

1. It provides you with a continuing process to ensure compliance.
2. It can help you identify emerging environmental problems and fix them before they become too costly.
3. It can help you identify cost saving opportunities.
4. It may help you reduce your environmental liability insurance premium.
5. It can improve your safety performance.
6. It demonstrates good faith effort on your part.
7. It helps you improve community relations.

These are all valid reasons to do environmental audits.

Some environmental managers get into a routine of doing environmental audit every year as part of their company policy. They develop a checklists and require the audit team members to follow the lists and never deviate from them. The checklists define the scope of the audit. Their efforts are more focused on documentation than discovery.

One auditor even went so far as to state in LinkedIn that “you don't conduct an audit to “fix” something, but rather as part of your quality/risk

management policy.” So he was just going through the motion to “fulfill” some nebulous risk management policy.

Somehow they have lost sight of the real reason people do environmental audits.

The fundamental reason and basis for doing routine audits is to uncover things that are wrong and fix them BEFORE they become unmanageable and/or too costly to fix. It is just like doing your annual physical examination. You want to see if there are any emerging medical problems that you can take care of before they become deadly. You absolutely do audit for the expressed purpose of identifying problems and fixing them. Otherwise you are just going through the motion. People should do auditing as part of their continuous improvement program. The word “improvement” means correcting things, fixing things and making things better. In fact, one of the continuous improvement steps is corrective actions.

An annual medical check up is like your compliance audit. You look for problems and FIX them before they kill you. When your doctor sits down and discusses with you your life style (how much do you drink and how often you smoke, etc), he is doing a management audit on you. And if your doctor has to refer to a checklist, get another doctor.

Checklists are only good for compliance audits - and marginally so. They tell you your compliance status at the time you perform your audit. The only thing they provide is a snap shot of compliance status and nothing more. If an auditor is any good at all, he should not have to rely on a list of things to tell him or remind him what to do. If you are doing management audit, you definitely do not want a checklist. But if you need a checklist to tell you what to look for, then you probably should not be doing management audit.

Be very wary of vendors out there who try to sell you audit programs that consists of nothing but a bunch of canned checklists. If you feel you have to use a checklist, you must take the time to develop or customize your own checklist. No two facilities are the same.

Many auditors look for "consistent" audits. They want to see consistency year after year. Yet, good audits are never consistent. At a recent Audit Roundtable annual conference, many environmental managers said they wanted the same old external auditors to do their audits every year in order

to get "consistent" results. They didn't want to spend time explaining their manufacturing process to a new external auditor. They wanted someone who is very familiar with their operation.

These managers obviously have never heard of the term "familiarity breeds contempt". They are also lazy. They are in effect just going through the motion of getting their annual audit done because their corporate policy dictates it. They are not interested in having a new auditor with a fresh set of eyes to find ways to improve their process or fix any problems that had been overlooked before by the previous auditor. They might as well just photocopy the previous year's report, change the date and save themselves some money.

One of the many reasons auditors (mostly inexperienced ones) like checklists is that they provide a scoring mechanism in addition to helping them remember what they ought to look for in the first place. They run through a list of 100 items on the list and 80 are checked off. The facility gets a 80% score. And that's better than the 75% score the facility got the year before. So there is reason for them to go out and celebrate. It is for this reason that many facilities view an audit as an examination that they need to pass.

How often have we heard someone say this "Phew..we passed another audit" as if it was a freshman



examination? They see the audit report as a report card. The problem with such reasoning is that it takes the focus away from FIXING problems. Where is the incentive to fix problems if you "score" 80%? And what specifically are those missing 20%? What if the missing 20% include some serious environmental issues?

And that's the main reason why so many audit reports sit on manager's book shelf collecting dust. It is the erroneous misconception that audit is not about fixing problems. They forget all about it after they have passed "the test". There are numerous major environmental disasters that occurred because management ignored previous audit findings and allowed

(knowingly or unknowingly) the manageable problems to fester into a major problem.

One of the largest sugar mills in the US was decimated as a result of combustion of fine sugar dust. An internal audit had identified the underlying problems. One of them was a malfunctioning dust collection system. No one took any action to correct it and the plant blew up.

Sometimes we get into the bad habit of testing just for the purpose of testing. The focus should always be on fixing the problem.

The completion of an audit is not the end. It is just the beginning.

Be careful with audit protocols. The problem with setting audit protocol is that it places unnecessary restrictions on other auditors. Strict protocol tells the auditors to look for things that you want them to look for. It places blinders on the auditors unnecessarily. That's where the excuse "it is not on my checklist or protocol" comes up most often. To be sure, there should be broad outline and objective for the audit so that when an auditor walks past a badly corroded water tank next to a power substation on his way to complete the checklist elsewhere, he will have the good sense and "freedom" to include that in his report even though water tank is not on his checklist or protocol. Because when the tank collapses and takes out the substation and the plant is out of commission for a week, there will be hell to pay and senior management will not buy the "it is not on my checklist" excuse.

Protecting Your Audit Results

There are ways you can protect your environmental audit reports. Here are some key points to remember about protecting your audit results:

- You must assert attorney/client privilege and state that the purpose of conducting the audit is to obtain legal advice from your attorney. The best way to secure such privilege is to ask your attorney to retain an outside law firm which in turns hires a consultant to perform the audit. The report goes to your attorney through the outside counsel.
- Always distribute your audit reports on a need-to-know basis. Indiscriminate dissemination of your audit report may be deemed as a

waiver of your attorney/client privilege. Always restrict the distribution of audit reports.

- Be mindful of attorneys in your organization who are acting as business manager. Your Vice President of Operation may be an attorney. But he is not acting as legal counsel for your company. His jobs is not to provide legal advice. Asserting attorney/client privilege through him will not work.
- EPA has a policy of not requesting privileged audit reports. However, if the agency suspects criminal wrong doing by management, it will go to court to have the court set aside the claim of privilege.

Remember that only the physical audit report is protected. The underlying facts leading to the report are never protected.

You should not do an internal audit because you can protect your report. You do it because it can help you identify and fix small environmental problems before they become too big and costly to deal with later.

Different Types of Environmental Audits

There are two types of environmental audits and they achieve two different results.

Compliance audit. This type of audit only gives you a snap shot of your compliance status at the time when the audit is performed. You are basically asking the question: “Is anything wrong here today?” It tells you nothing about the future. This is like getting your annual physical examination. Your doctor can tell you what ails you on the day of the examination. He can’t predict whether you will live long enough to come back a year later.

When you do a compliance audit, you look at physical things such as:

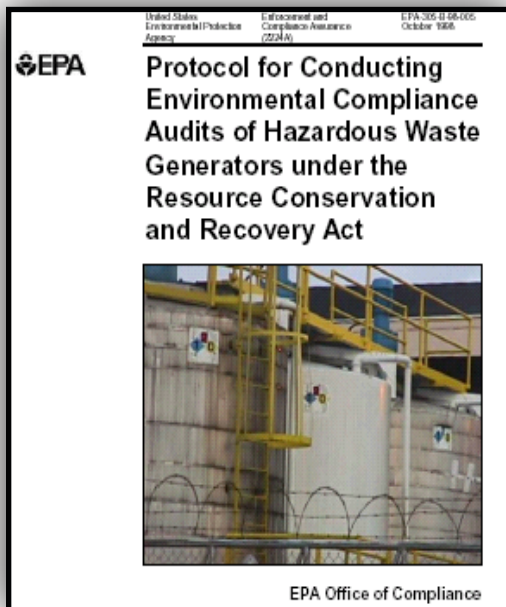
- Evidence of past spills such as discoloration of soil and vegetation housekeeping
- Hazardous waste drum conditions and labels
- Accumulation start date on the waste drum label
- Secondary containment in oil storage area

- Sufficient aisle space between drums in storage area

You review records such as:

- Hazardous waste manifests
- Solvent usages as required by air permits
- Discharge monitoring reports for waste water treatment plants
- Employee training records
- Inspection logs

EPA has many audit protocols you can use when you are doing a compliance audit. For example, EPA has published audit protocols on the following:



- Hazardous waste generators
- Universal wastes and Used Oil
- Emergency Planning and Community Right to Know Act
- Superfund
- Underground Storage Tanks
- Risk Management Plan under the Clean Air Act

You should also look for checklist from your state and local agencies. Most state agencies have inspection and compliance checklists that you can use for your own compliance audits. Just go to their websites

and download them for free.

Management audit. In this type of audit, you review the corporate structure and people. You are asking the question: "What happens when something goes wrong tomorrow?" The analogy is when your doctor has a lengthy discussion with you about your life style. He is going to ask you how much do you drink, how much red meat do you eat, how often do you smoke and how many hours of exercise you get a week. He is examining your life style. After an extensive discussion with you and after reviewing your test results, he should be able to tell with some certainty if you will live long enough to visit him a year later.

What do you look for in an Environmental Management Audit? You look at things such as:

- Management structure. You look at how the management structure is set up to handle environmental issues. You look to see who is responsible for doing what. And you also try to find out the attitude of the people responsible for environmental compliance.
- Staffing level/capability. You determine whether the company has provided sufficient support and financial resources to the environmental staff.
- Response capability. You find out if the environmental staff has the capability to handle emergencies. You determine if they have the experience and knowledge to do their job. One of the most important things to look for is whether they know enough to ask the right questions and seek outside help.
- Plant ownership. You find out if the people at the plant level have ownership of their environmental plans. For example, you want to find out if they have been involved in the development of Spill Prevention and Control Countermeasures (SPCC), storm water pollution prevention plan, or RCRA Contingency Plan.
- Relationship with regulatory agencies. This is by far the most important aspect of an environmental management audit. You want to find out if the plant manager has good working relationship with the local regulatory agencies. His attitude will permeate down the entire organization through the staff who report directly to him. If the answer is no, you have a ticking time bomb on your hands.

In a management audit, you always ask open ended questions. These are questions that cannot be answered with a yes or no. Here are some examples:

- Who is responsible for developing the contingency plan?
- What management level signs off on the plan?
- Who decides when the plan should be changed?
- What specific training does that person have? How do you manage your wastes?

- When do you alert your senior management about an environmental issue?
- Why do you do it this way?
- How do you ensure that your waste transporter and TSD are licensed?
- Where do you keep your manifests?
- What systems are in place to determine waste characterization?
- Who decides what a solid waste is ?
- Who decides what a hazardous waste is?
- How often do you review environmental performance?
- How do you know that you have an environmental problem?
- How are you getting along with the agencies?
- What training do you provide for your staff handling hazardous wastes?
- Who is accountable for environmental performance at the plant level?



When doing an environmental management audit, the five questions that an auditor should always ask are the who, what, when, how and why. All of these are open-ended questions - questions that cannot be answered with a yes or no answer.

You are always in search of high quality information.

Miscommunication and misunderstanding occur when people use different standards of measurement to define performance. For example, the salesman measures his own job performance by the number of sales orders he has taken. His boss – the general manager – views the salesman's performance as the amount of revenue coming into the company at any given time. So if the cash is slow coming into the company's bank account, the general manager may accuse the salesman of not selling enough goods while the salesman feels that he is not being appreciated for his hard work. Miscommunication leads to conflict in this case.

This conflict can very easily be averted if the participants involved look for higher quality information. They would have discovered that the

problem lies with the billing clerk who has been very tardy in mailing out invoices.

Consider the following examples of low and higher quality information:

Low Quality Information	Higher Quality Information
Let's meet next week in downtown Los Angeles.	Let's meet at 3:00 pm next Wednesday at the coffee shop on 123 Main Street in downtown Los Angeles.
We have numerous violations of our wastewater discharge permit.	We violated 4 parameters (TSS, pH, temperature and chlorine) 7 times last month.
The groundwater was contaminated.	The aquifer was contaminated with TCE with an average concentration of 200 ppm and the contamination plume was heading towards the American River.

As an auditor, which type of information would you like to have?

One way to judge whether you have high quality information is to apply the wheelbarrow test. If you can put the bit of information in a mental wheelbarrow, it is more likely than not to be of high quality.



For example, if someone tells you that he wants you to install 50 red telephones in his offices, that is high quality information. You can put the red telephones in a wheelbarrow. You know exactly what he means. But if he tells you he wants you to improve his inter-office communication system, that's low quality information. You cannot place "inter-office

communication system” in your mental wheelbarrow. You will want to ask him more questions to find out what exactly he wants from you.

In their fabulous linguistic book “The Structure of Magic”, Richard Bandler and John Grinder give more examples of words that can and cannot be placed in a mental wheelbarrow:

These cannot be put in a wheelbarrow	These can be put in a wheelbarrow
I have a lot of frustration	I have lots of green marble
I expect help	I expect a letter
My fear is too great	My coat is too big
I lost my temper	I lost my book
I need love	I need a bottle of water
Failure frightens me	Horses frighten me
The tension bothers me	The dragon bothers me

As you talk to people during your audit, always look for high quality information. This is part of the active listening process - a process by which you look for information that is both specific and precise.

Another reason for obtaining high quality information is that it will help you avoid making the wrong assumptions about a situation or a person.

To obtain high quality information, you need to ask open ended questions. The level of quality of information you should seek is determined by your desired outcome.

It is like looking at an aerial photograph of a large facility. If you are only interested in determining the outer boundary of a site, you probably don't need to zoom in too much on the aerial photograph. But if you are trying to see how many drums of chemicals are being kept outside in the

backyard of a factory, you would want to zoom in much deeper and get a much higher resolution of the aerial photo.

Here are some more examples of open-ended questions:

By asking a question like “**who** is responsible for preparing this emergency plan?” rather than merely checking off a box that asks “Is there an emergency plan”, the auditor will be able to determine if the right person is preparing the plan. Does that person have the proper training and experience to develop the plan?

The auditor should also ask questions like “**what** do you look for when you are classifying your hazardous wastes?” This question provides the auditor insights on the knowledge of the person doing the waste classification. Does that person really understand what constitutes a hazardous waste? Or is he simply following a set of procedures without understanding the reasoning behind them? What if something out of the ordinary that is not in the procedures comes up? Will that person have the knowledge to handle the situation? Will he have sufficient knowledge to handle that? Or will he know enough to ask for assistance?

“**When** do you report a chemical spill?” This question provides the auditor information on the facility's understanding of spill reporting requirements. Chemical spill reporting is a large environmental compliance issue as well as posing significant environmental risks for the facility.

“**How** do you manage your wastes?” The person who is asked this question will have to tell the auditor his understanding of the procedures he follows in managing his hazardous wastes.

“**Why** do you do it this way?” This is by far the most probing question that an auditor can and should ask at every environmental management audit. Very often the answer comes back as: “I do it this way because my predecessor has been doing it for the past 30 years.” Such an answer should give the auditor pause. Does that person really understand what he is doing or is he simply following what has preceded him? What if his predecessor has been doing it wrong for the past 30 years?

By asking these five types of simple open-ended questions (who, what, when, how and why) you will gain a much better idea of how the audited

facility will fare in the future. All of these questions elicit high quality information.

In other words, these open-ended questions offer an excellent predictor of future performance. They also provide the auditor an excellent tool to quantify the environmental risk. A compliance checklist - on the other hand - merely provides a snap shot of the compliance status on the day the audit is performed. It is not a predictor of future performance.

And best of all, these open-ended questions prevent the auditor from having a tunnel vision as exemplified in the following example.



An auditor was given a checklist to do his audit. He went to the wastewater treatment to check the pH of the plant's effluent to see if it was in compliance with its permit range of 6.5-7.5. He discovered that on that given day the pH value was 7.7. He reported it as a violation. As he left the treatment plant, he walked past a 10,000-gallon water storage

tank that showed severe signs of corrosion. Next to the tank was a transformer substation that supplied power to the entire facility. But since structural integrity of a water tank was not a regulatory compliance issue and therefore not included on his checklist, he walked right past it.

The auditor had tunnel vision.

Three days after the compliance audit, the water tank collapsed and flooded out the transformer substation and the entire manufacturing plant was out of business for a week.



Which posed a greater risk to the plant? The minor pH violation or the structural integrity of the water tank?

Root Cause Analysis

As the name indicates, root cause analysis is a tool to find out the underlying reason behind a particular situation. You start by asking the question “why?” and keep going until you find the root cause.

Here is a simple root cause analysis example:

As the auditor walked into the hazardous waste storage area, she noticed that several containers had no labels on them. She asked: “why are there no labels on these containers?”

There are three possible answers to this open-ended question.

1. No one was responsible for putting labels on drums
2. The labels simply just fell off
3. No one was told labels on hazardous waste drums was mandatory

Based on her previous discussions with plant personnel, the auditor knew that the maintenance supervisor was put in charge of putting labels on drums and he had completed his hazardous waste training not too long ago. So clearly #2 was the most likely answer. The labels simply fell off the drums and got swept away.

Her next question was: “Why did the labels fall off?”

Again, there were three possible answers:

1. The labels fell off because the drums were in a very caustic environment.
2. The adhesive quality of the labels was poor
3. The drums had been sitting around for years

She ruled out answers #1 and #3 because the environment was not caustic and the drums were relatively new. So #2 was the most plausible answer.

Then the auditor asked: “Why was the adhesive quality of the labels poor?”

Three possible reasons appeared:

1. The specification for the adhesive was wrong
2. the purchasing agent went with the lowest bidder and switched to the cheapest brand of labels
3. It was just bad luck that the plant got a bad batch of labels with poor adhesive quality

Reason #1 was not plausible because no one specified adhesive quality when buying labels. Reason #3 could not be true since label quality had been pretty consistent. So the reason there was no labels on some drums was because the purchasing agent bought some crappy labels.

The final question the auditor asked was: “Why did the agent end up buying the cheapest labels?”

The underlying reason was that the agent never bothered to check with the environmental coordinator before ordering the cheap labels. He simple went with the “go with the lowest bidder” policy.

By undergoing a series of simple “why?” questions, the problem of “missing labels on hazardous waste containers” was traced to the purchasing department. The problem was resolved by setting up a procedure whereby the purchasing agent must obtain the approval of the environmental coordinator before switching to a new brand of labels.

Preparing Your Audit Report

It is always better not to have a written audit report. If at all possible, present your findings to management orally. Without a written audit report, you do not have a paper trail. If you have to prepare a written report, try to stay with the facts.

Here are some examples of poorly written reports:

“The plant has no hazardous wastes management program to speak of. Many drums are not labeled. The accumulation area has never been inspected since no documents of such inspections have been found. These are all clear violations of RCRA regulations.”

“We inspected 20 transformers and 10 capacitors. Many of them leaked.”

“Housekeeping in the hazardous waste accumulation area is terrible. There are numerous RCRA violations.”

“A worker was observed not to be wearing appropriate Personal Protection Equipment. This is a gross negligent act on the part of the employee and management.”

“There was no documented evidence of weekly inspection.”

“Many drums did not have labels on them.”

All of the examples above do not tell the readers too much information. They are vague and accusatory in tone.

Here are some examples of the improved versions

“Of the 24 drums in the storage area, 17 did not have the “Hazardous Waste” label on them.”

“We could not find procedures for ensuring that the selected TSDF has the minimum liability insurance coverage of \$5 million as required by corporate office.”

Here are some tips on preparing [audit reports](#):

- Stay with facts and observed behavior
- Be specific on nature of findings
- Avoid accusatory language
- Do not draw legal conclusions in terms of violations
- Do not criticize individuals
- Provide regulatory or policy references

The following talks about how to write an effective environmental audit report. The guidance here also applies to any kind of technical reports. We write reports for two main reasons: To convey information and/or to persuade the reader to take action.

To achieve these objectives, the report must first be readable and clear.

Here are a few suggestions for clarity:



1. Use simple language. Do not use fancy words to impress the readers. Why? Because most readers are not impressed by big words generally. Don't use words like "sustainability" unless you and your readers really understand what it means. Always use words that are familiar to your readers. That does not mean you should not use long words. The words "instantaneously" and "spontaneously" are both long but they are also familiar to most people. The word "alb" is short but it is not too familiar to many people.
2. Get rid of deadwood. Here are some examples. Instead of saying "in the month of August", just say "in August". Instead of "a fine in the amount of \$2000", say "a \$2000 fine". Use "daily" instead of "on a daily basis". Don't say "the sum exceeds more than 50". Say "the sum exceeds 50". Here is a general rule: Write your report as if you are being charged for every word – and not as if you are being paid for every word.
3. Avoid accusatory language in your audit report. Do not use these words: alarming, dishonest, perjured, intentional, negligent, willful misconduct, reckless, incompetent, fraudulent, dangerous, deplorable, criminal, etc. Remember the adage "praise in public and reprimand in private". You should write your report to convey your findings and not make accusations. You can always discuss the "reckless or criminal" behavior with senior management in private.
4. Write short sentences. Break those long compound sentences into shorter ones. This just makes it a lot easier for the readers.
5. Stick to the facts. If you could not find a weekly inspection checklist, say so in your report. Don't say that the weekly inspection was never

done. Just because you could not locate the checklist does not mean that the inspection was never done. The unavailability of the checklist may well be a valid separate finding.

6. Be concise and precise. If you inspected 24 drums of hazardous wastes and 17 of them did not have “hazardous waste” labels on them, say so. Don’t say “many drum have no labels on them”. Say “17 out of 24 have no labels.”
7. Avoid excessive use of acronyms. Don’t try to bedazzle your readers with your knowledge of technical terms and jargons. Keep in mind that many readers of your report are not engineers or scientists. Many senior managers are attorneys, accountants and MBAs. Acronyms such as PSD, RCRA, TRI, CERCLA, HAP, NESHAP, MACT, TSCA, RMP, PSM, etc will put them in a coma.
8. Be specific in your conclusions. If you are doing a compliance audit and everything appears to be in order, the only thing you could say is that “based on your review and visit on the day of the audit, the facility appears to be in compliance (on that day).” You cannot predict what will happen next day or next week. Now if you are doing an environmental management audit, you may be able to say something about how the facility might function in the future.

A few words here about presentation. There is a disturbing trend in corporate America. People no longer write reports with complete sentences. Many reports are now written in PowerPoint slides jammed with 10 or more dreaded bullet points each.

If you are thinking of presenting your audit report in one of those awful PowerPoint presentations, DON’T!

Always present your audit results in a concise (not truncated bullet points) written report with full sentences. Why? Because you want your readers to understand your findings and take action.

The following common communication problem started many years ago. Company executives started replacing written reports with PowerPoint

presentations (loaded with bullet points). A presenter would speak at length and elaborate on each bullet point at the meeting. That was fine. The REAL problem came when the PowerPoint slides were passed on down to lower level staff for implementation.

There were no backup documentations. No detailed analysis. No explanatory notes. These lower level people never attended the meeting and never heard the detail explanation behind those bullet points. All they had was a bunch of truncated bullet points and that's where everything started to go wrong: misunderstanding, misinterpretation, miscommunication, hallucination....etc.

Millions of dollars of mistakes have been made because of this problem. Don't let that happen to you.

8. Selecting the Right Consultants

Unless you have a fully staffed environmental department, chances are you will need consultants at one time or another. Selecting the right consultant is more an art than a science - something few people have mastered.

Here are some no-holds barred practical tips on how to select and manage your environmental consultants - from the perspective of someone who has been on both sides of the desk.

1. Hire Consultants with Real World Experience

There are not too many environmental consultants who have actual hands-on experience working in a corporate or manufacturing plant setting. Many come from government agencies or worse yet, straight out of college. If you don't believe it, just take a look at the classified ads section in your local newspaper. You will see ads for "environmental consultants" with 0 to 3

years of experience! There are even fewer consultants who have had personal experience of having to manage a corporate environmental compliance program on limited budgets the way you have to do it everyday.



If at all possible, you want to hire consultants with real and actual industrial compliance experience - someone with experience similar to yours. You will develop much better rapport and communication with these consultants. The next choice is perhaps someone with regulatory experience at federal or state environmental agencies. If you hire someone straight out of school as your consultant, you are in effect paying him to learn while he earns. The last

choice should be the academic types. Bright as they may be, these folks have the tendency to want to study a problem to death. They can't help it - it is the academic curiosity in them.

2. Never Hire Big Firms to Do Small Jobs.

This point cannot be over emphasized. Do not hire a nationwide environmental consulting firm with 95 offices in 35 countries on 5 continents to pull an underground storage tank for you. You are asking for trouble if you do. Why? You will end up paying for the firm's huge overhead costs. You will be subsidizing their vice presidents' worldwide travel.

The young engineer assigned to your yank-a-tank project is billed out to you at \$95 an hour. His paycheck is closer to \$20 an hour. The other \$75 an hour goes to pay for his firm's large overhead. For small jobs, say under \$50,000, you are better off in many instances by hiring a small firm that specializes in the specific area of interest to you. Experienced freelance consultants are also excellent candidates for these kinds of small projects. These are professionals who have left large consulting firms to start their own businesses.

You will be better served by paying \$50 an hour to a freelance consultant with comparable experience. She more than doubles her income and you save \$45 an hour! A win-win situation for both of you. These freelance consultants generally produce a much higher quality work product at a much lower cost. The reason? You get the same experience and knowledge as you would get from a large firm but without the high overhead. It simply makes good economic sense.

It is also true that smaller firms or freelance consultants are generally more accessible and responsive to their clients' needs. They own their practices and they tend to pay more attention to their clients' needs.

The salesmen/consultants from the large firms – the ones with 95 offices in 35 countries on 5 continents - will of course tell you that you would benefit greatly from their firm's vast array of expert resources available to you at your beck and call. Take that with a large grain of salt. That's nothing but sales talk. Most large firms are so spread out that many of their employees have no idea what their colleagues are doing much of the time. Each consultant is assigned to his/her own individual projects and could care less about yours. Synergy simply does not exist in these large firms.

In short, there is a time to go big and a time to go small - for the same reason that you would not retain a 500-person international law firm to contest a parking ticket for you in traffic court.

3. **Be Wary of Those "full service and uniquely qualified" Consultants.**

How many times have you been approached by consultants/salesmen who tell you they are a "full service consulting firm" and are "uniquely qualified" to do whatever your needs are? That's even before you tell them what you need. These days, it seems that any firm with more than 5 persons is billed out as "full-service".



The truth is that NO consulting firm, large or small, can provide full service to all clients. You will find large firms that are very strong in some areas but totally lacking expertise in others. When faced with a project that requires multi-faceted talents, most firms will team up with others. Even national firms with 4000 employees do that. There is nothing wrong with this approach except

that the team members will inevitably mark up each other's work. And guess who ends up paying the 15 to 20 percent subcontractor markup? You – the client.

4. **Watch out for the Bait-n-Switchers.**

How many times have you listened to sales pitches from big consulting firms during the proposal stage promising that this particular Project Director with 20 years of experience will be dedicated to your job only to find out later that a recent college graduate with one year of experience is now working (or learning) on it? This happens more often than you think.

Be very specific in demanding that the person promised to the project be the one actually working on it. Stipulate that any personnel change can only be made with prior written consent from you – the client.

5. Watch Out for Senior Executive Review by Consultants.

When reviewing proposals from large consulting firms, always watch out for the number of hours proposed for QA (Quality Assurance) review. Many large consulting firms put in these hours just to keep their top executives more billable.

There is a fundamental reason why these charges of quality assurance should never appear in any proposal. Here you have a firm just finished proposing to assign "the best" environmental consultant to your project at an hour rate of \$200 for 100 hours. And at the same time, the same firm wants a Senior Executive to spend an additional 20 hours at \$450 per hour to "review" this top consultant's work in order to assure quality! Does that make sense? Quality assurance is not the real reason here. That Senior Executive needs billable hours!

Quality assurance is the lifeblood of a consulting firm's work and should be built into the hourly rate of the person assigned to the project. It is part of the firm's cost of doing business – it is legitimate overhead.

6. Withhold final payment and provide incentives and reward.

Always try to hold back at least 10 percent of payment until the consultant has completed the job to your satisfaction. On major projects that have deadlines and/or savings from early completion, it is also a good idea to include a penalty clause for missing deadlines and/or a cash bonus for early completion. The savings can be shared with your consultants as an incentive.

7. Be Wary of Change Orders

A major environmental consulting firm in the Los Angeles area spent a good number of hours preparing change orders several years ago. It got to a point that its clients got so concerned about the cost over-runs that they demanded a tracking system be set up and the numbers of hours spent by each consultant on different tasks be reported on a monthly basis. The consultants were only too happy to comply with this demand. That meant an extra 15 billable hours per month for a consultant to prepare the spreadsheet and submit the monthly report to the client. The client paid for

the time to track cost over-run charges as well as the actual cost over-run. Good work if you can get it.

8. Hire Consultants Who Are Not Confrontational

Last but not least - make sure your consultant has the proper temperament and personality to work with and get along with folks at regulatory agencies. After all, this person is representing your company before the agencies. An antagonistic attitude from a consultant representing you can cost you time and money and goodwill with the regulatory agencies. These are things you can ill afford. It may be a good idea to check a prospective consultant's reputation within an agency just to make sure you don't end up with a bull in a china shop.

Pricing your Consultants

Lowest Bidder

Many organizations have purchasing policies that require them to obtain three quotes from vendors or consultants and then go with the lowest bidder. This policy may work well for common office commodities like paper clips and pencils. It can be a recipe for disaster for environmental services. Give you an example. If you hire the lowest bidder to haul off your hazardous wastes for you, what assurance do you have that the hauler will transport your wastes to the final destination safely and legally. There are many factors more important than cost to consider. First one is to ensure that the transporter is legally permitted by EPA to haul hazardous wastes. It is your legal responsibility as a hazardous waste generator to do so. You need to go beyond pricing and do your own due diligence before choosing your waste hauler.

Many companies have a purchasing policy of going with the lowest bidder. This works wonderfully if you are buying paper clips or pencils. But it often does not end well for companies that procure environmental or safety related services.

Here is what happened to a power plant that went with the lowest bidder.

In 2007, a major hydroelectric power plant needed contractors to paint a portion of its 4300 foot penstock. A penstock is a huge water pipeline that

connects water from the upper part of a reservoir to the lower part in order to drive its turbines to generate power.

The portion of the penstock that needed painting was over 1000 feet from the entrance which also happened to be the ONLY point of egress. This work site required a confined space permit under OSHA standards.

The company issued a request for proposal and received several bids from painting contractors. It also retained the service of a consulting firm to help evaluate the bids.

The lowest bidder was a contractor that had a history of OSHA violations – some involving fatalities. In the bid review process, this low bidder was determined by the company and its consultant to have the lowest possible safety rating among all the bidders.

But this contractor was selected because it was the lowest bidder. It did not go over the company's budget limit.

According to government investigator, the painting contractor began work on re-coating a 1,530-foot steel portion of the 4,300-foot penstock. It stored large amount (two 55-gallon drums) of a highly flammable solvent (methyl ethyl ketone MEK) in the vicinity of the paint spraying machine. The MEK was to be a cleaning solvent for the paint spraying wands. On a fateful day, a flash fire suddenly erupted as the vapor from the flammable MEK vapor ignited. The fire spread quickly to nearby buckets of solvent and other combustible epoxy materials.

Five painters working for the low bidder were trapped between the fire and a steep 55-degree slope inside the penstock with no possible way out. They died from asphyxiation in about 45 minutes after the fire.

Subsequent investigations by the US Chemical Safety Board – a body created under the Emergency Planning and Community Right to Know Act (EPCRA) – concluded that the low bidder was not qualified to carry out the confined space job and that the company that hired it had failed to ensure proper safety measures and training were taken. The low bidder never implemented a confined space entry program to protect the workers. The investigators also found out that there were no fire extinguishers within 50 feet of the work station as required by law. This was a probable reason why

the trapped workers were not able to put out the initial and subsequent fires. There was no way out for the workers.

OSHA fined the company \$190,000 for failing to protect its own workers and for failing to arrange for rescues of the workers who perished. The low bidder was fined \$845,100 for bringing unsafe electrical equipment into the penstock and failing to provide adequate ventilation and failing to provide and emergency response for the accident.

The fallout did not end there.

The company, the low bidder and two senior executives were subsequently indicted by a federal grand jury in August 2009 for failure to implement a confined space program – among many other criminal charges. Criminal trial is set for 2011.

The Department of Justice also charged the low bidder with “knowingly altered, destroyed, concealed, and covered up records, documents, and tangible objects” in obstructing justice. Cameras, journals and cell phone belonging to some of the employees who died were tampered with – according to the indictment.

The fact that a contractor with a safety rating of zero and a checkered past was hired solely based on cost is a sad commentary on the purchasing policy of the company.

What is the lesson learned here? If you set a budget to do a task and find out later through the bidding process that no qualified contractors can do the job within your budget, the solution is NOT to hire an unqualified contractor that can do the job within your budget. The proper approach is to either increase your budget or reduce the scope of work.

As evidenced above, in safety and environmental projects, the liability is much higher and more severe than buying the wrong kind of paper clips.

Due diligence should also be applied when selecting the Treatment Storage and Disposal Facility (TSDF) for your hazardous wastes. The primary impetus for doing due diligence on the TSDF is Superfund’s “joint and several” liability.

In the event that your TSDf turns into a Superfund site, you and ALL the other companies that ship wastes to this site (collectively known as Potentially Responsible Parties - PRPs) will be held “jointly and severally” liable for the ENTIRE cleanup cost of the site. Therefore, you want to make sure that many other financially viable companies also ship wastes to this site. The more viable PRPs there are at the site to share the cleanup cost, the less you need to pay out.

On the other hand, if you are the only financially viable PRP and all the other PRPs are small companies that go out of business, you will most likely be left holding the bag for the entire cleanup cost. Of course, you also want to check the operations of the TSDf to assure yourself that the site will not likely turn into a Superfund site. At a minimum, you should request an “audit package” from the candidate TSDf. This package should contain permit information and compliance history of the site. If you are planning on shipping a lot of wastes to that site, you should conduct your own site audit or retain some experienced consultants to do that for you as part of your due diligence.

That’s why due diligence is critical in picking the TSDf and transporters. Never go with the lowest bidder without due diligence.

Watch Out for Those Low Ball Bids

Many low bids are “low ball” proposal to get the contractors’ or consultants’ feet “in the door”. Not too long after they get in, they start issuing change orders. All of a sudden, your low cost project does not look so cheap anymore. Be very careful about this tactic.

Let’s say a contract sends you a proposal that you really like and it is the lowest bidder. Before you decide to go with this contractor, you may want to find out why the bid is so low. It would not do your project any good if the bidder can’t finish the work or it goes out of business because it underbids the job inadvertently. If you are dealing with a construction project with a completion deadline that you cannot afford to miss, you might want to consider a reward/penalty clause in your contract. You would pay the contractor so many dollars per day for every day the project is completed ahead of schedule. On the flip side, the contractor would be penalized so much per day if it were to fall behind.

Lump Sum Contract

A lump sum contract is when a contractor or consultant agrees to perform certain tasks for you at a fixed price. When entering this kind of contract, you need to make sure that the scope of work is clearly defined in detail and agreed to before hand. If done properly, this can be a very effective way of obtaining results at a known cost to you.

Time and Material with a Not-to-Exceed Ceiling

This is one of the most common methods of paying for professional services. You pay for the time the consultant spends and the expenses he incurs with a maximum limit on the total cost. It gives you control over the total cost of the project. In theory, the consultant will bill you for his actual time spent on the project. In practice, you will find in many instances the total amount billed to be within a whisker of the ceiling amount. This is known in the trade as “never leaving any money on the table”.

Charging by the hour is an interesting concept. Accountants do it. Attorneys do it. Consultants do it. And your friendly household plumbers do it too.

Take the story about the boiler expert who was hired to find out why a boiler was not working. He spent 20 minutes examining the boiler and then he pulled out a little hammer and tapped it several times at one particular spot. The boiler started working again immediately. The expert submitted an invoice for \$5000 to the owner of the boiler. The owner objected strenuously claiming the invoice was too high for just 20 minutes of labor and demanded an itemized invoice. The expert returned with the following itemized invoice: Item 1: \$50 for 20 minutes of labor and tapping. Item 2: \$4950 for knowing where to tap.

There is a strong case to be made for Item 2.

Pay for Performance

If some consultant or contractor comes to you and promises you that he can save you thousands of dollars by helping you implement an improved

process, you can accept his offer in several ways. One way is to pay him his hourly rate and hope the process will actually save you money. Another approach is to work out a “profit sharing” plan whereby you pay him a percentage of what his advice has saved you. You are in effect asking him to put his money where his mouth (promise) is. If the improved process works, both of you end up winners. If it doesn’t work, well he has worked for nothing. This is one way to weed out the charlatans. Very few consultants will take up this offer.

Watch out for hidden costs. A consultant recently received an unsolicited proposal letter from a marketing expert who promised to work for nothing if consultant’s revenue didn’t increase by \$100K after implementing his marketing plan. Sounds pretty good at first cut. What this expert failed to point out was the amount of money the consultant would have to invest to implement his marketing plan in order to increase his revenue by \$100K. It wouldn’t do the consultant’s bottom line much good if he had to spend \$150K, would it? This marketing guru also promised in bold writing that he would call the consultant personally the following week to discuss his proposal. Of course he never called.

If it sounds too good to be true, it usually is.

Outsourcing Professional Services

There has been a growing trend with companies outsourcing environmental services. A common example is where companies and municipalities outsource their wastewater treatment plant operations to private firms. Under this arrangement, a private company comes in and takes over the entire operation and maintenance of the treatment plant. Through economy of scale and efficient cost control, many of these privately operated plants can be profitable. Here are some pointers on how to negotiate a multi-million dollar outsourcing project.

When outsourcing your facility to a private operator, you need to pay special attention to several critical items. First and foremost, make sure that the operator assumes all liability (workers compensation and environmental penalties). If your plant fails to meet permit conditions while being operated by the contractor, the contractor should indemnify your company for any fines the agency may levy. Make sure there is a clause in the contract clearly requiring the contractor to certify to you that the Discharge

Monitoring Reports (DMR) prepared by them for your signature is accurate. And they assume all liability if any of their employees were to falsify the DMR.

The second critical item is to make sure that the contractor does its own characterization of your wastewater prior to submitting their proposal to you. You should demand that they certify in the proposal that they have performed their own due diligence in evaluating your wastewater and that they are satisfied through their own tests that they can treat your waste to the level prescribed by your permit. In that way, if they run into technical difficulties later in meeting your permit limits and your raw wastewater stays within a mutually agreed-to range, they will have no one to blame but themselves.

Again, you should also be wary of the low bidder. If a contractor tells you that it can operate your plant with one-tenth of your existing manpower, you might want to take a long hard look at its proposal. It is reasonable to expect that the contractor will have a lower labor cost through automation and operational efficiency. But there is a limit to cost savings.

The Importance of Proper Due Diligence - a case of Caveat Emptor

In the aftermath of the Love Canal dump site debacle in 1980, Congress enacted the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) - commonly known as the Superfund Law. Under this law, any owner or operator of a contaminated site is held strictly liable for cleaning up the site. Strict liability means all government has to do is to show that you are the land owner.

This law put landowners who unknowingly purchased contaminated property at risk for the clean up costs. In 1992, Congress amended the Superfund Law to include an "innocent Land Owner" defense (ILO) against Superfund liability. ILO defense basically says that if a purchaser conducts environmental due diligence BEFORE completing the sale, he will get some protection from Superfund liability if the commercial property he purchases turns out to be contaminated.

The due diligence process for the prospective land owner is codified in the Federal Regulations as All Appropriate Inquiries (AAI). AAI is also

commonly referred to as Phase 1 Environmental Assessment. To qualify for the exemption, the AAI must be performed by an Environmental Professional (EP) or under his direct supervision. The qualifications of an EP are also codified in the federal regulations.

The AAI requires the following:

- Interviews with past and present owners, operators and occupants;
- Reviews of historical sources of information;
- reviews of federal, state, tribal and local government records;
- visual inspections of the facility and adjoining properties;
- obtain commonly known or reasonably ascertainable information; and degree of obviousness of the presence or likely presence of contamination at the property and the ability to detect the contamination;
- searches for environmental cleanup liens;
- assessments of any specialized knowledge or experience of the prospective landowner;
- an assessment of the relationship of the purchase price to the fair market value of the property, if the property was not contaminated; and commonly known or reasonably ascertainable information.

A professionally prepared Phase 1 report that meets the AAI requirement will general cost the prospective landowner several thousand dollars or more depending on the size and history of the commercial property.

Unfortunately, due to the economic downturn and various other reasons, Phase 1 mills are popping up everywhere. These are firms or sole proprietors that charge \$800 or less to “perform” a Phase 1 assessment for a commercial site. Many buyers, lenders (banks) and sellers are hiring these mills because of the low costs.

What they do not understand is that they are putting themselves in great jeopardy in terms of Superfund liability. They may think that the \$800 Phase 1 report will provide the necessary shield against future cleanup cost. But they would be wrong.

Here is what could happen when these low cost phase 1 mills are involved:

If the seller gives the buyer one of these deficient reports as evidence of “clean health” on the property, the seller can be sued in court for misrepresentation.

If a lender pays for one of these reports and gives it to the buyer and approves the loan, the lender can be sued by the buyer if the property turns out to have contaminations that were missed in the report.

The buyer may not be able to use his \$800 report to claim his ILO exemption because the AAI procedures were not followed.

Just how bad can some of these Phase 1 mill reports get? Here is an example:

A consultant was hired to perform an AAI on a commercial property located in the state of Illinois. His report consists of the following:

- 6 pages of scope of work and limitations
- 5 pages from the Illinois Soil Conservation Transect Survey Summary
- 11 photos without any annotations
- 13 pages of definitions including one that states that UST means underground storage tank!
- 17 pages of hydrogeology data from a county in Wisconsin bearing the same name as the county (where the site is located) in Illinois.

The meat of the report consists of ONE single page of record review and HALF a page on site reconnaissance. It was capped off by one page of recommendation and final opinion and a signature. The investigation completely missed the presence of a leaking underground storage tank. There were no review of Sanborn maps and hardly any review of agency records.

This entire report could have been written in an hour with a 15-minute coffee break thrown in.

The adage “you get what you paid for” is never more true. It is highly doubtful that the new owner would be able to claim his ILO defense. To obtain exemption from Superfund liability, you cannot have a deficient Phase 1 report. It simply will not get you the protection that you want.

There are also a growth of database companies offering banks and buyers “desk top” reviews of historical environmental records. There is nothing

wrong with these desk top reviews as long as they are done as part of the site investigation. It is a mandatory requirement under AAI that the EP conducts a physical site visit. No Phase 1 report is complete without that.

Always remember this: Extremely low price = shoddy work = deficient report = huge liability for you.

On the flip side: Just because you pay a lot of money for a report does not necessarily mean your report will not be deficient. You may be paying a lot of money to a big consulting firm that employs recent college graduates to do most of the work. On any given day, you will see advertisements from large consulting firms looking for “environmental professionals” with zero to 2 years of experience to work on environmental site assessment projects.

No person with zero to 2 years of experience (even with a college degree) can qualify under the federal definition of an EP within the AAI program.

The key question is: are these individuals being properly supervised?

A recent Michigan case illustrates the risks associated with the failure to conduct proper due diligence. In *Alfieri v. Bertorelli*, 2011 Mich. App. LEXIS 1796 (Mich.Ct. App. 10/18/11), the buyers purchased a condominium unit in a former factory building as an investment. The factory had been impacted with trichloroethylene (“TCE”) from its former use. A newspaper article and the real estate agent’s sales brochure indicated the site had been remediated despite the fact that the state agency had advised the realtors that the sales brochure was inaccurate and misleading. The buyers relied on the newspaper article and the sales brochure and did not perform their own due diligence before closing the deal.

The property turned out to be heavily contaminated. The buyers subsequently filed a lawsuit against the real estate agents on theories of silent fraud and negligent misrepresentation. The jury found that the agents engaged in negligent misrepresentation. However, the jury also determined that the buyers were partially responsible for their damages because they had failed to perform their own due diligence. The jury assigned the buyers 35% fault on the negligent misrepresentation claim.

According to noted New York environmental attorney and law professor Larry Schnapf: “An owner could lose its ILO defense and be on the hook for

a cleanup if the phase 1 did not identify contamination”. His website <http://www.schnapflaw.com/> lists many recent cases where courts ruled against land owners because of poorly prepared due diligent reports.

Moral of the story: Buyers beware and the onus is on you to hire qualified professional to do due diligence.

9. Ownership is the Key to Implementing Your Plans

There is an old saying that goes like this: “Tell me, and I will forget; show me, and I may remember; involve me, and I will understand”.

Many chemical accidents are caused by the lack of ownership of certain plans or procedures on the part of plant personnel. There are practical ways to put ownership back into the process.

In a recent chemical accident that killed four persons and injured six, the US Chemical Safety Board concluded that one of the root causes was that



supervisors and workers from that particular plant were not involved in the process hazard analysis of the operation. Personnel from another plant performed the analysis earlier. There was no plant ownership! The folks at the plant where the accident took place had no ownership of the process.

The Chemical Safety Board is an independent investigative body authorized by the Clean Air Act Amendments of 1990 and became operational in January 1998.

The Board also discovered that much of the procedures and safety information were never made available to the workers in their native language. Furthermore, people were performing their tasks based on their own individual work experience.

At another incident involving a catastrophic vessel failure where 4 workers died, the same investigation board found that management did not provide workers at the facility with written operating procedures addressing the alignment of valves during purging operations. Again – another real life example of lack of ownership.

The best way to ensure ownership of any plan is to adopt the basic concept of I.D.E.A.S., which stands for:

Invite them to the meetings
Delegate responsibilities

Expectations are provided to them
Assign them specific tasks
Simplify the process

The first thing you want to do is to let the people affected by your plans attend some of the planning meetings. Get them involved. If you are preparing your storm water pollution prevention plan or Spill Prevention and Control Countermeasures Plan, make sure the people who are going to be implementing the plan actually attend some of the meetings while the plan is being drawn up. Since some of these folks are going to be doing the inspection for you, it is to your best interest to ensure that they are part of the team right from the start. Ask them to provide suggestions and incorporate some of their ideas into the plan.

That is the essence of ownership. The more they are involved, the more ownership they have and the more likely that they will implement your plan.

If you hire an outside consultant to prepare these plans for you, make sure that the consultant does not prepare them in isolation. At a minimum, give your plant personnel a chance to review the drafts and solicit their input prior to finalizing the plan. A simple gesture like this can earn you a significant degree of plant ownership.

By the way, if you are a corporate environmental manager, it is best to encourage the plants to prepare their own reports such as Tier II on March 1 of each year. The reason is that these reports require the plant to identify the amounts and locations of hazardous material on site. It does not make sense for you or an outsider to prepare them since the plants need to have ownership of what chemicals they have.

Once your plan has been prepared, you will need to delegate responsibilities for implementing the plan to someone. At the same time, you also need to provide specific guidance to the staff on what is expected of them to do.

For example, if you ask someone to perform the weekly hazardous waste accumulation area inspection, show that person how to complete the checklist and tell him that you expect him to follow up on any required corrective action. If he notes that a "Hazardous Waste" label is missing on a container, it will be his responsibility to correct the situation or to bring it to

the attention of someone who can fix it. This requirement needs to be spelled out clearly so that nothing falls through the cracks.

Another way to impact ownership is to let everyone know what to do in case of a chemical spill. Post the National Response Center reporting phone number (1-800-424-8802) right next to the telephone in the chemical storage area. Clearly lay out procedures on who is to be notified within the organization.

It is also critical for you to assign specific tasks to individuals. For example, in the case of chemical storage, you want to make sure that one person is assigned the responsibility of checking the Safety Data Sheet or the supplier for safe storage information. Many chemical accidents have been known to occur because no one bothered to check for safe storage information when a new chemical was received. No one had been assigned this specific responsibility.

Another area where you need to have assigned responsibility is the task of updating all your plans. Most of the plans required under federal regulations are “live” documents. In other words, they need to be updated or revised as circumstances at your facility change.

A very commonly cited violation is the failure of a facility to update its RCRA Contingency Plan when there is a change in personnel referenced in the Plan. This failure occurs happens when there is no plant ownership.

Perhaps the most important element of ensuring ownership is to simplify the process. Make your plans as simple as possible. Whether they are RCRA Contingency Plans or Storm Water Pollution Prevention Plans, keep them simple, practical and easy to implement. The same applies to your waste storage inspection checklist. Keep it to one page and make it easy for the person to check off items that are in compliance and identify those areas that need immediate attention.

Always go for quality rather than quantity. If you have a plan that is unnecessarily complicated or too convoluted to read, no one is going to pay attention to it and nothing will be done. All you end up with is a nicely prepared and unread plan sitting on the bookshelf.

Remember: There is a good reason why we never wash the rental car before we return it. We do not own it.

And no parents ever call their own baby ugly.

Many companies hire consultant to prepare environmental plans for them. These plans often include Spill Prevention Control and Countermeasure (SPCC) plan, storm water pollution prevention plan (SWPPP), or RCRA Contingency Plans. The consultants always write up a beautiful and thick report and give it to their clients who then put the plan on the bookshelf and forget all about it until an inspector shows up asking for it.



Does that sound familiar?

If your consultant prepares a SPCC plan for you, make sure your senior management signs off on the SPCC certifying that it understands the resources required to implement the plan and it is prepared to commit such resources. It is a legal requirement that there is written “management approval at a level of authority to commit the necessary resources to fully implement the Plan”. Without such approval by way of a signature from management, the plan is “invalid” and the facility could be cited and possibly fined by US EPA. Note that enforcement of SPCC is a federal responsibility and is carried by EPA Regional Inspectors.



The requirements of SPCC under the Clean Water Act consist of preparing a plan and implementing it. An EPA inspector will always look for evidence of implementation. If your SPCC plan calls for monthly inspection, the inspector would expect to see a completed monthly inspection checklist as evidence of your implementation of the plan.

Here is a quote from EPA's SPCC Guidance for Regional Inspectors (dated November 28, 2005): "In summary, the EPA inspector should verify that the owner or operator has inspection reports that document the implementation of the testing, evaluation, or inspection criteria set forth in the Plan." You can download a copy of EPA's SPCC Inspection Guide at <http://www.epa.gov/oilspill/guidance.htm>.

It is also a legal requirement that plant personnel be trained on the SPCC plan in order for them to implement it. If your consultant includes in the plan a training schedule, the inspector would want to see a signed attendee's list at a training session as evidence that you have actually implemented the plan.

If there is personnel change since you last prepared your plan, you will need to revise the document to reflect that if the change materially affects your plan. For example, if you have a new plant manager, you need to change you SPCC plan to reflect that.

Here are some practical tips and key point to remember on preparing environmental plans:

1. If at all possible, try to prepare your environmental plans yourself. This is the best way to ensure you and your staff have ownership of the plans. There are numerous guidance documents on EPA's website on how to prepare SPCC plans, SWPPP and RCRA contingency plans. These are the same documents your consultants use to prepare your plan.
2. If you must use outside consultant to prepare your plans for you, do not allow the consultant to prepare the plans in total isolation without any input from you or your staff. At a minimum, make sure the consultant meets with those who will be implementing the plan. That is the only way your plant personnel will have ownership of the plan. Without such ownership, nothing will happen and the plan will most likely not be implemented as written. Remember: we don't wash our rental cars because we don't own them.
3. Remember that you no longer need a Professional Engineer's certification in a SPCC plan if you do not have more than 10,000

gallons of shell capacity on site. You can now do self certification under a new SPCC rule.

4. Make sure that you are comfortable with the inspection and training schedules that your consultant puts in the plan. Why? Because you are going to be the one implementing it – not your consultant.
5. Do not be overly ambitious in your plan. Only commit to what you can deliver. Words are cheap – it is easy to talk about what you plan to do because they are just words on a piece of paper. You want to make sure you can actually deliver it. The inspector will want to see if you keep your promise.
6. Start putting a training program together as soon as your plan is written up. Set a schedule to do the training and make sure you document all your training efforts.
7. As soon as you finish writing the plan, you must think about implementing it. Many people think that their work is done once a plan has been written by their consultants. In fact, their work has just started. Most of these plans – especially the SPCC and SWPPP – are made up of two parts: plan preparation and implementation of the plan. The only way you can demonstrate that you are actually implementing your plan is to show the EPA inspector copies of completed inspection checklists and training records.

The main point to remember about most the environmental plans is that they are **performance-based**. In other words, after you have prepared the plans, you are expected to perform!

Writing Best Management Plans

Here are three examples of BMPs that are required under US environmental regulations.

BMP for storm water management

BMP for hazardous wastes

BMP for spill control

In all three examples, you are required to evaluate your particular situation and come up with a specific plan of your own to mitigate any environmental damages that might arise.

In the case of storm water BMP, you must identify how you store your chemicals and how you operate your facility and develop a plan to minimize the impact on storm water.

There are two basic types of BMP: structural and procedural. Your structural BMP would describe how you physically control the movement of storm water to avoid coming into contact with your industrial activities. For example, if you build a roof over your chemical storage area and install secondary containment, you are physically and structurally preventing the storm water from coming into contact with your chemicals.

A procedural storm water BMP would consist of good housekeeping practices that require your staff to clean up any spilled chemicals and not wash them down the storm drain. You achieve that through a training program and implementing of procedures to mitigate potential damages.

In the case of hazardous waste BMP, you are required to have a contingency plan or emergency response plan in place to manage any incidents involving your hazardous waste storage areas. In this case, you must identify an emergency coordinator who has been given the prior authority to shut down operation in the event of an emergency. As part of the plan, you will have to develop a weekly checklist to inspect your waste storage area. The regulations do not prescribe how you should write your contingency plan. The details of the weekly inspection checklist is left up to you. But the agencies do require you to develop the plan AND implement it.

If you store more than certain amount of oil onsite and have the potential to impact navigable waters of the United States, you are required by law to develop a BMP known as Spill Prevention and Control Countermeasures (SPCC). In this plan, you must identify specific steps that you will take to prevent any spilled oil from reaching the navigable waters of the United States. The specific details of how you do it is based on where and how you store your oil. Every facility is different.

One common thread among these BMPs is that you control the contents of these plans and it is your responsibility to demonstrate to the agency that your plans will do the job and that you will implement the plans as written by you.

Is your BMP overly simplistic that it cannot possibly mitigate any damages? Or is your BMP so complicated and ambitious that you cannot possibly implement it? There is a happy medium and that's what the agencies look for during an inspection. They look for evidence of implementation as written in the plan.

Many facilities make the mistake of hiring outside consultants to prepare these BMPs for them without any regards to how the plans will be implemented. For example, if the consultant puts down in the BMP that you will inspect your oil storage facilities every day, will you have the manpower to carry it out? The agencies will be looking for a COMPLETED daily inspection checklist as evidence that you have carried out your BMP.

The best way to avoid such situation is to make sure you and your staff are involved with the consultant in developing the plan. Make sure the consultant does not promise anything in your BMP that you cannot deliver. Also make sure the people who will be implementing the plan are involved. Ownership is the key to implementing any environmental plans.

Bottom line: always write a plan that has sufficient meat in it to do the job but not so complicated that it never gets implemented.

10. How to Deal with Citizen Lawsuits

If you are a large company and have a wastewater discharge permit and you have had recurring violations of your permit conditions, there is a pretty good chance that some environmental groups are watching your performance. If you continue to have the violations, there is a good chance too that your company will be hit with a citizen lawsuit.

In the absence of Federal or State enforcement, a citizen who has an interest that is or may be adversely affected commence a civil action under “citizen suit” provisions included in the Clean Water Act, against any person alleged to be in violation of, among other things, the conditions of a Federal or State NPDES permit or a Federal or State order.



Specifically, section 505(a) of the Clean Water Act (Federal Water Pollution Control Act of 1972) authorizes private citizens who feel they have been affected by the unlawful discharge of a company to file a citizen lawsuit against the company if the regulatory agencies fail to take enforcement action against the company. Some people call this the “citizen prosecutor” provision. Congress included such provision in the law in order to allow private citizens to take action in the absence of government enforcement. Other federal laws such as the Clean Air act and the Emergency Planning and Community Right to Know Act (EPCRA) also have similar private citizen action provisions. It is most common under the Clean Water Act.

This chapter provides you with a layman’s overview and some practical management ideas on how to deal with citizen lawsuits.

If you have been reporting (under penalty of perjury) in your Discharge Monitoring Reports (DMR) that you have exceeded your permit limits and yet the regulatory agencies have not taken enforcement action against you, don’t count your blessings yet. Any private citizens or environmental groups may be monitoring your performance and contemplating suing you. Remember that all DMRs are public documents and are accessible to anyone who cares to ask for them.

Remember that once you get hit with a citizen lawsuit, you do not have much of a legal defense. The group that is suing you is going to take you to court and tell the judge that you have violated your permit conditions. These are the violations that you have already admitted and certified in your DMR to the agency. The group will very likely ask the court to impose the maximum penalty - \$37,500 per day per violation - on your company. So if you have 10 violations per day for 3 months, your potential penalty exposure in court is \$33.75 million!

There are basically three possible options available to you when you have been served with a lawsuit. The first option is to negotiate a settlement with the group that is suing you. The second option is to ask the agency to pursue legal action against you in order to preempt the citizen lawsuit. The third option is to fight it in court.

If you decide to negotiate a settlement with the group that is suing you, the best approach is to sit down with them and find out the real reasons behind the lawsuit and what they want from you. The negotiation process will go a lot smoother if the principals are directly involved rather than attorneys. Before you start the negotiation process, you should make sure that both parties are negotiating under the protection of Federal Rule of Evidence 408. This Rule basically states that discussions between the parties during negotiation are not admissible in court later.

The successful outcome of this option would be an out-of-court settlement which generally goes like this: You are going to have to agree to pay the agency a cash penalty for your transgressions. You will end up paying the attorneys who represent the citizens who want to sue you. You will also have to agree to invest in operational and/or capital improvements in your treatment plant in order to prevent future violations. All of these obligations will be imbedded in a legally binding document known as a Consent Agreement which will have to be approved by the agencies involved and the court. The Agreement will most likely include language that requires you to make frequent reports to the citizen group and meet certain specific deadlines in terms of improved performance. Failure to meet any of these reporting and performance deadlines would automatically trigger stipulated penalties. These are penalties written in the Agreement that you have agreed (stipulated) to pay if you miss a deadline.

The second option is to get the agency to take enforcement action against you in order to preempt the citizen lawsuit. Under the Clean Water Act, any person contemplating suing you must send you and the agency a letter (known as Notice of Intent to Sue) and wait 60 days before that person has legal standing before the court. The Act also states that if the agency has commenced and is diligently prosecuting a civil or criminal action against you within the 60-day waiting period, the lawsuit is preempted.

The United States Supreme Court has noted that citizen suits are “proper only if the Federal, State, and local agencies fail to exercise their enforcement responsibility”. The trick here is to get the agency to take action against you within the 60-day notification time period or else the group will have legal standing before the court.



The advantage of this option is that the citizen lawsuit will be preempted if you are successful in getting the agency to act during the 60-day waiting period and you would not have to pay the group’s attorney fees – which could be quite substantial. Another benefit is that you would not have to deal with an outside group. However, you would still have to negotiate a substantial penalty and reach some sort of remedy with the agency.

The third option is let the case go to trial. This is not a very wise choice because you have already admitted to all the violations in your DMRs. You don’t have much of a defense in court.

The bottom line is this: The best way to avoid all these legal headaches is to take proactive steps right away when you have violations. Find out what is causing the frequent violations and fix it in a timely manner. Remember to document every step that you have taken to correct the violations. Do not take the attitude that everything is fine because the agencies have not taken enforcement actions against you. With the advent of the internet, it is becoming very easy for outside groups to monitor what you are doing.

Environmental groups are watching you.

11. Get Ready for the Inspectors

EPA conducts about 25,000 inspections a year through its 10 Regional Offices. In addition to these, there are numerous state and local agency inspections. There is a strong likelihood that you will have been inspected by one of these agencies at least once.



There are many reasons why agencies do inspection. Here are some common reasons:

- You have a wastewater permit. As a condition of accepting your permit, you have acceded to inspections by the agency during normal operating hours. The agency will come in to do routine compliance inspections.
- The agencies have targeted a particular industry for compliance inspections. For example, EPA may decide to focus on dry cleaners for inspections. Or it may decide to focus on the oil and gas industry in a particular region of the country.
- The agency receives a lot of complaints from your neighbors. For example, if your neighbors complain to the agencies about excessive noise or malodors emanating from your facility, the agency will come and inspect you.
- Your employees file complaints with the agencies. If you have labor/management relations issues, it is possible that some employees will contact the agencies and tell them about unsafe work practices or illegal dumping of wastes.
- You are the target of an investigation for environmental crimes. The inspectors and law enforcement personnel will show up to collect evidence on the court's behalf for possible criminal prosecution.
- Your company has a history of non-compliance. If you have reported violations of your permit conditions every month and you show no signs of improvement, the agency will come and see what is going on with your treatment plant.

Joint Federal/State Inspections

Most federal environmental laws have been delegated to the state level by EPA. So the state agencies are inspecting your facility under the authority of federal laws. The EPA will conduct joint inspection with the state agencies. This is one of the most troublesome types of inspection. When this type of inspection occurs, the state agency is being “evaluated” by EPA. Your normally friendly state inspector may take the extra time to look for violations.

Make sure you are prepared for this kind of inspection.

Agency’s Authority to Inspect

In many cases, the agency’s authority to inspect comes from you! You gave the agency consent to inspect your facility when you accepted the agency’s permit. Here is the language in such a boilerplate clause in your permit.

Many state and federal laws provide the agencies with specific statutory authority to inspect you.

RIGHT OF INSPECTION AND ENTRY

The Permittee shall allow an authorized representative of the Department, upon the presentation of credentials and such other documents as may be required by law:

- A. To enter upon the premises where a discharge is located or where any records must be kept under the terms and conditions of this permit.
- B. To have access to and copy - at reasonable times and at reasonable cost - any records required to be kept under the terms and conditions of this permit.
- C. To inspect - at reasonable times - any facilities, equipment (including monitoring and control equipment), practices, methods, or operations regulated or required under this permit.
- D. To sample or monitor - at reasonable times - any substances or parameters at any location for purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act.

For example, under Section 3007 of the Resource Conservation and Recovery Act, EPA is authorized to:

•Enter at reasonable time any establishment where hazardous wastes are or have been generated, stored, treated, disposed of, or transported from

- Inspect and obtain samples from any person of any such wastes and samples of any containers or labeling for such wastes
- Request information pertaining to hazardous wastes from the facilities and obtain copies of all records relating to hazardous wastes

The agency can conduct inspection during reasonable hours without a warrant if you give consent. What constitutes a “reasonable time” varies according to the circumstances. Normal business hours or hours of operation generally are deemed reasonable. Upon arrival, the inspector should display credentials and locate the proper official.

Under Section 114 of the Clean Air Act, EPA is allowed to enter your premise to collect air samples. Here is the language from the law itself:

(2) the Administrator or his authorized representative, upon presentation of his credentials--
(A) shall have a right of entry to, upon, or through any premises of such person or in which any records required to be maintained under paragraph (1) of this section are located, and
(B) may at reasonable times have access to and copy any records, inspect any monitoring equipment and method required under paragraph (1), and sample any emissions which such person is required to sample under paragraph (1).

The agency may:
access property;
access records; copy records; and collect sample. EPA is obliged to provide you with a split sample upon your request, but the facility must provide its own sample containers and

sampling equipment.

In general, the agencies can request information from you. They can make copies of your records. They can take pictures of your facility and collect samples for analyses.

The consequences of refusing EPA entry to your facility vary under different statutes. In most cases, when faced with a denial of entry, the inspector will retreat to the agency and obtain an inspection warrant from the court and return more determined than before to inspect your facility. You will have no choice but to let the inspection in under the court order.

Under the Toxic Substances Control Act, it is a crime to refuse entry to an inspector.

What Are Your Rights?

You have certain rights when it comes to being inspected. You can deny the inspector access to your facility. But you need to know the consequences and be prepared to face them. As stated earlier, once

denied access, the inspector will return to the agency and obtain an inspection warrant from a court and will return with a different attitude.



Don't win the skirmish and lose the war.

Remember that your reaction will determine the inspector's action.

You can require inspectors to observe your documented company safety policy. Some state laws specifically require inspectors to observe reasonable company safety policy. You can have attorney or consultant present during an inspection. But do not keep the inspector waiting for your consultant or attorney to arrive. The best way is to establish telephone contacts with your consultants and attorneys beforehand if you

know you are going to be faced with a major inspection.

Never use agency inspections as a "cheap" way to verify your compliance status! The inspector is not there to help you achieve compliance status. His job is to determine if you are in compliance. In rare instances, an inspector may give you some suggestions if you have developed a good rapport with him. In general, inspectors are not allowed to provide advice.

Always maintain a professional attitude when interacting with the inspector. Remember that the inspector is there to do his job. If you treat the inspector with professional courtesy and respect, the inspector will likely reciprocate. In the odd case where an inspector's behavior appears to be unreasonable or hostile, you can always contact the inspector's office and request a different inspector.

Preparing for an Agency Inspection

Getting ready for the inspection is the key step to an inspection with a good outcome. Very often, you know you are going to be inspected because the inspector has just shown up at the other end of the industrial park where you are located. You know sooner or later he is going to come to you.

The first thing you need to do is to review your permits and all applicable regulations carefully. You should be more knowledgeable about your own permit conditions than the inspector.

For example, if your permit requires you to keep track of solvent usage by gallons daily, the inspector will be asking for a spreadsheet of such records from you.



Go online and download your agency's inspection forms or checklists. Many agencies have them. Use EPA's "audit Protocol" series as checklist. DTSC and CUPAs all have inspection checklists on their websites that you can download for free.

These agency checklists provide a road map for you throughout the inspection. You know the inspector will be using the same checklist on your facility. So what you need to do is to do your own mock inspection using the same check list (without documentation) before the inspector shows up. Fix any problems that you uncover during the mock inspection. It is absolutely unnecessary for you to document all the "violations" that you find in your

mock inspection. Why lay a paper trail to incriminate yourself? Just fix the infractions and move on.



You should organize your records in separate files. Identify privileged documents and keep them separate from others. These are documents and written communications you have with your attorney and they are supposed to be protected under attorney-client privilege.

The reason you want to organize your documents is to make it as easy as possible for the inspector to review them in order to shorten the duration of the inspection. For example, gather up ALL your waste manifests and arrange them in chronological order in a folder for the inspector to review. The last thing you want is to have the inspector wait around while you

scramble to get the manifests from the shipping dock, front office and maintenance office.

The way you keep your files and records is an indicator of how you manage your program. It is “paper housekeeping”. Messy housekeeping will always lead to more probing by an inspector. Inspectors are trained to view poor housekeeping as an indicator of environmental non-compliance.

So getting your place cleaned up should be top priority.

Designate a team and leader to accompany the inspector at all times

You should also do the following:

- Establish a chain of command within your organization.
- Assemble your camera. The best way to prepare for this is to have a disposable camera in your office at all time.
- Alert your legal counsel and consultant.

Opening Conference

You should always have an opening conference with the inspector. At this meeting, the inspector will tell you the purpose of the inspection. Your team should observe how the inspector keeps records and take copious notes of the questions and answers.

Introduce your team to the inspector and provide a description of your facility. Explain your corporate health and safety procedures. Always be cordial, cooperative and professional.

Here are some practical tips on what to do during the inspection:

1. Stay with the inspector at all times during the plant tour. Take the most direct route to the place where your inspector wants to go.



2. Instruct your staff not to volunteer information but always answer truthfully to the inspector's questions. In other words, they should only answer when asked.
3. Let your staff know that it is a crime to lie to an inspector - especially a federal inspector. If they don't know the answer, just say "I don't know".
4. Tell your staff not to speculate on things of which they have no personal first hand knowledge. If they do not know the answer to a question posed by the inspector, they should say so and not guess at the answer.
5. Always listen to the inspector's comments and one of your team members should be taking notes.
6. If the inspector takes pictures of your facility, you should take pictures of the same event at the same time as the inspector.



7. If the inspector collects samples, you should request a split sample and the agency's analytical results. Once you have a split sample, you will have to decide if you wish to perform your own analysis. Keep in mind that your laboratory result is discoverable by the agency. So you should do your own analysis if and only if you are sure you are going to get favorable results. The ideal situation is to wait till you get the results from the agency and do your own analysis only if the results are not favorable to you. But you often cannot hold your samples for too long due to preservation time.
8. Remember this: It is never your job to help the inspector do his. If the inspector makes an error or does not ask the right question, it is not your job to help him. We often have the tendency to want to show how knowledgeable we are by correcting the inspector when he makes an error. For example, if the inspector collects a waste sample for oil and grease analysis using a plastic container, the analytical results are not valid due to chemical interference from the plastic. Then is not the time to tell the inspector about the sampling protocol error.

9. Never reprimand your employees in the presence of the inspector when the inspector points out a possible violation to you. All you are doing is giving the inspector a very negative impression of how you manage your business and treat your employees. You also will have created a possible enemy or informant in that employee after you have humiliated him in front of the inspector.



10. If possible, fix the problem **before** the inspector leaves your site. You can demonstrate proactive management on your part if you can correct a violation that the inspector has pointed out to you before the inspector leaves your premise. That's another reason why you have a team. Your proactive action in fixing the problem right away may even eliminate or minimize the possibility that the inspector will cite you for that violation. You have nothing to lose.

Closing Conference

Here are some practical tips on what you can do after the inspection tour:

1. Document the inspector's comments and opinions on any alleged violations.
2. If the inspector alleges any violations, ask for specific regulatory references.
3. Clarify any misunderstanding the inspector may have with your operations. Correct any factual errors made by the inspector and note it in writing. For example, if the inspector claims incorrectly that you are a large quantity generator, you should correct the inspector right away.
4. Request copies of all documents, photos and reports from the inspector. Assert confidentiality claim on all photos taken by the inspector if necessary. This will prevent the inspector from sharing any of your photos with others.

5. Try to resolve as many issues as possible with the inspector before he leaves your premise. Failing that always try to resolve issues at the lowest possible level within the agency! Try to resolve any issue with the inspector and his supervisor. Slowly work your way up the chain of command. Keep in mind that the higher the level you go, the less control you are going to have of the process. Once you reach the agency's legal staff, you will have ceded control to your legal counsel. Never admit to any alleged violation in the presence of the inspector unless it is indisputable. In this case, fix it before the inspector leaves your premise if possible.

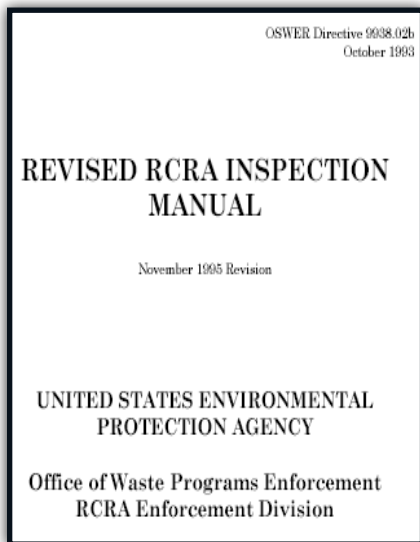


6. Never sign any statements prepared by the inspector without consulting first with your legal counsel.
7. Never be belligerent with the inspector. Do not get into an argument with the inspector. There will be plenty of time later to challenge the citation. Don't win the skirmish and lose the war.
8. Review and verify any allegations made by the inspector. Inspectors are known to make mistakes. Read the pertinent regulation carefully and read it again.
9. If you are sure you have committed a violation, discuss the matter through your chain of command and nobody else!
10. Create separate files for any anticipated citations.
11. Start preparing your own case and building your argument with your legal counsel. It is important to take good notes during the inspection.
12. Never write an internal memo to all staff telling them that you have multiple violations as a result of the inspection. You are admitting

guilt in writing. A much better approach is to send out a “reminder memo” to all staff reminding them to comply with those regulations that you seem to be having problems with without making specific reference to the inspection.

Always remember that you have the right to challenge or contest any citation. Just because an inspector says you have a violation, it does not mean you have one. Inspectors can and do make mistakes. That’s why it is important to review the citation and the relevant regulations.

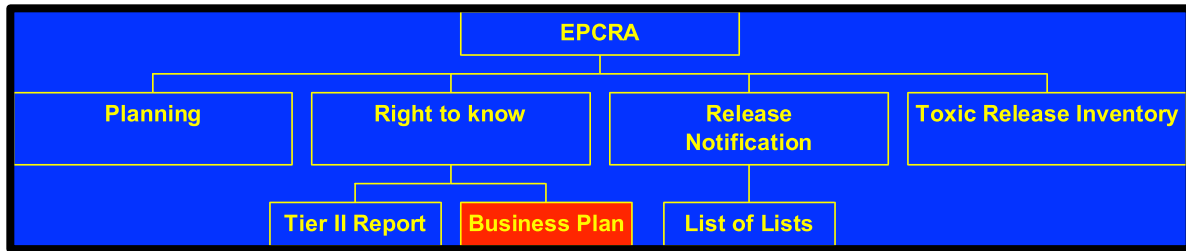
When it comes to penalties, they are always negotiable. They are more negotiable if you have good working relationship with the agency and you have demonstrated that you are proactive in correcting environmental non-compliance issues.



There are many resources out there to help you understand agency inspections. One of them is a 700+ page manual prepared by EPA for its hazardous wastes inspectors. It details steps an inspector take before, during and after an inspection. It can be downloaded from EPA’s website.

There are also many agency inspection checklists out there. These are checklists that an inspector would use at your facility.

12. How to Prepare for THAT Accident



Emergency Planning, Release Reporting and Community Right to Know (EPCRA) law was enacted by Congress in 1986 in reaction to a chemical accident that killed several thousand people in Bhopal India.

The law has four main components:

1. Emergency Planning (Section 301-303). This section requires each state to create a State Emergency Response Commission (SERC) and designate Local Emergency Planning Committees (LEPC) in each district. Complete listing of LEPCs can be found at EPA website. Each LEPC had to establish an emergency response plan by October 1988.
2. Emergency Release Notification (Section 304). The release notification covers 366 EHS and 721 other hazardous substances. Facility must immediately notify the affected SERC and LEPC if there is a release of the following substances greater than reportable quantity (RQ).
3. Community Right-to-Know Reporting (Sections 311 and 312). If you have more than the threshold amount of certain chemicals, you have to file a Tier II report with the LEPC. In California, instead of filing a Tier II report, you file a Hazardous Material Inventory - commonly referred to as the Business Plan.
4. Toxic Chemical Release Reporting (Section 313). If you have manufacture, process or use more than a certain amount of certain chemicals, you have to file a Form R report to EPA and the state agency detailing your total emissions for those chemicals in question.

EPCRA is also known as SARA Title III because it was enacted as Title III of the Superfund Amendment and Reauthorization Act (SARA).

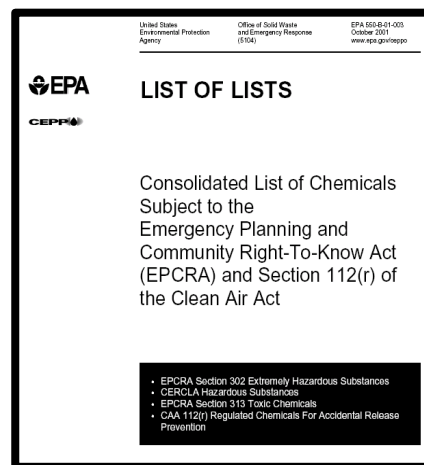
There are 3 general concepts under EPCRA, namely:

- Reportable quantities
- Threshold planning quantities
- Definition of “environment” includes land, air and navigable water outside facility boundaries

The List of Lists

You should use the Lists of Lists to identify your Reportable Quantities. This list of lists encompasses:

- CERCLA reportable quantities (40 CFR 302.4)
- EPCRA’s List of Extremely Hazardous Substances (40 CFR 355, appendices A & B)
- RCRA P and U wastes
- Clean Air Act RMP chemicals (40 CFR 68.130)
- Form R (Toxic Release Inventory) chemicals (40 CFR 372.65)



You should compare your chemical inventory with the List of Lists and determine the RQs for all the chemicals that you have. Note that the RQs always refer to the pure form of a substance. For example, if you have a compound that is made up of 50% of a chemical that has a RQ of 100 lbs, you would have to spill more than 200 lbs of that compound to trigger the reporting requirement.

Federal Reporting Procedures

Notification can be done by phone or in person. Initial notification can be by phone, radio or in person and must include the following information:



SPILL/RELEASE REPORT

INITIAL REPORT
Completed by supervisor before end of shift.

SPILL CHARGE: 35	DURATION OF DISCHARGE (MIN.): 20 min	TIME OF DISCOVERY: 11:35
Vapor Release		
HAZARDOUS MATERIALS ALREADY REACTED	TYPE OF MATERIALS: " "	

- chemical name
- estimated quantity of release
- time and duration of release
- medium (air, water or land)
- nature of health risk
- evacuation and contact person
- Written follow-up report after the initial notification
- Actual response action taken

and advice regarding medical attention for exposed persons.

An example of the Notification Checklist is shown on the following page.

NOTIFICATION CHECKLIST

Note: It is not necessary to wait for all information before noticing the agencies (e.g. NRC)

Reporter's Name _____ Position _____

Phone Number () _____ Company/Facility Name _____

Date ___/___/___ Time _____ Address _____

RELEASE or THREAT OF RELEASE (circle one)

Type of Material _____

Incident Location _____

Address _____

ON-SITE or OFF-SITE (circle one) Weather _____

Spill Cause and/or Source _____

Spill Date ___/___/___ Time of Spill _____

ONGOING or CONTAINED (circle one)

Spill Volume _____ Additional Amount at Risk _____

"RQ" of Material _____ "RQ" Exceeded YES* NO (circle one)

Potential Threat to Human Health YES* NO (circle one)

Explain _____

Injuries: _____

Potential Threat to Environment (Air, Water/Groundwater, Land) YES* NO (circle one)

Explain _____

Release from Permitted Surface Impoundments YES* NO (circle one)

Discharge not Specified in NPDES Permit YES* NO (circle one)

Explain _____

Response Actions Planned and/or Taken _____

Estimated Time Cleanup will be Completed _____

Emergency Response Agencies/Contractors Called to Assist _____

Electrical Accident or Significant (Newsworthy) Incident YES* NO (circle one)

Additional Information _____

*Make appropriate notifications) and document contacts on Notification Requirements Outline.

National Response Center 1-800-424-8802

Let's face it – sometimes bad things happen to nice people. That's why we have the occasional chemical spills and accidents.

Here are some of the practical steps that you can take to prevent and prepare for a chemical spill/accident.

The first thing you ought to do is to learn from other people's mistakes. Find out what caused their accidents. There are resources out there that can tell you the root causes of these major chemical accidents. For example, whenever there was a major chemical accident involving fatalities or significant environmental consequences, EPA and OSHA used to launch a joint investigation and post their findings on the Internet at EPA's website.

The US Chemical Safety Board now investigates all major chemical accidents and their findings are available on its website www.CSB.gov.

Let's see how we can learn from other people's mistakes.

Based on the investigation reports of several major chemical accidents, here are some of the most common causes contributing to the accidents:

- **Improper storage of chemicals.** A company in Arkansas stored Azinphos methyl – AZM 50W (a pesticide) next to a hot compressor discharge pipe despite specific warnings on the Material and Safety data Sheet (MSDS). Under the Storage Section of the MSDS, it states that AZM is to be stored "*in a well ventilated, dry place away from heat (>100 F) and other sources of ignition*" This warning was ignored and the pesticide subsequently decomposed and caused a major chemical accident in May 1997 that killed three fire fighters. Hundreds of residents nearby had to be evacuated. This was a classic case of failure to check the MSDS prior to storage.
- **Lack of standard operating procedures to handle hazardous chemicals.** A 5700 gallons tank containing hydrochloric acid ruptured in April 1997 and caused the evacuation of a 10-block area near the company in Albany, New York. Twenty people were hospitalized. Subsequent investigation showed that the company did not have any standard operating procedures for off-loading of acids.

It also stored hydrochloric acid and sodium hypochlorite in close proximity. The company also failed to follow the “Responsible Distribution Process” prepared by the National Association of Chemical Distributor of which it was a member.

- **Lack of hazard analysis prior to startup.** In a major refinery accident in 1997 when an explosion caused a fire that burned for 10 hours and affected the entire community in Texas, it was determined that the company did not have an adequate hazardous analysis system for its compressed gas system and that the operators did not have procedures to deal with emergencies.
- **Insufficient training of employees who handle hazardous chemicals.** In 1998, two explosions at a chemical plant in Nevada killed four workers and injured six others. The joint EPA/OSHA investigation report concluded that “poor management and worker training led to a lack of knowledge of the hazards involved in manufacturing explosive.”
- **Lack of employee ownership in developing plans.** This was also cited as another cause of the chemical accident in Nevada in 1998. Employees were not involved in developing or conducting process safety activities. This resulted in a lack of understanding of the process hazards and controls by the workers.

Here are some **practical tips** that you can take to greatly minimize the chance that you will have a serious chemical spill or accident:

1. Assign someone the responsibility of checking the MSDS for storage requirements or restrictions for new chemicals. Set up an internal checking system to ensure that this is done. The next two pages show EPA’s chemical incompatibility charts.

Hazardous Waste Storage Incompatibility Chart

Substances in bold have detailed example lists on the next page.

If the material contains:	It may not be stored with any of the following:
Acid (pH below 2.0)	Caustics (pH above 12.5) Reactive Metals Alcohol Water Aldehydes Halogenated, Nitrated, or Unsaturated Hydrocarbons Reactive Organic Compounds and Solvents Spent Cyanide and Sulfide Solutions Oxidizers
Caustic (pH above 12.5)	Acid (pH below 2.0) Reactive Metals Alcohol Water Aldehydes Halogenated, Nitrated, or Unsaturated Hydrocarbons Reactive Organic Compounds and Solvents
Reactive Metals	Caustics Acids Alcohol Aldehydes Halogenated, Nitrated, or Unsaturated Hydrocarbons Reactive Organic Compounds and Solvents Oxidizers
Reactive Organic Compounds and Solvents	Caustics Acids Reactive Metals
Spent Cyanide and Sulfide Solutions	Acids
Oxidizers	Acetic or Other Organic Acids Concentrated Mineral Acids Reactive Metals Reactive Organic Compounds and Solvents Ignitable [Flammable/Combustible] Wastes*

* "Ignitable" in this context refers to substances with a flashpoint below 140x °F, and includes:
Combustible substances, with a flashpoint below 140x °F
Flammable substances, with a flashpoint below 100x °F.

Some Deadly Combinations

Acids + Oil or Grease = Fire Flammable Liquids + Hydrogen Peroxide = Fire/Explosion
Acids + Caustics = Heat/Spattering Aluminum Powder + Ammonium Nitrate = Explosion
Caustics + Epoxies = Extreme Heats Sodium Cyanide + Sulfuric Acid = Lethal Hydrogen Cyanide
Chlorine Gas + Acetylene = Explosion Ammonia + Bleach = Noxious Fumes

In general: **Reactives** must be segregated from **Ignitables**

Acids must be segregated from **Caustics**

Corrosives should be segregated from **Flammables**

Oxidizers should be segregated from **EVERYTHING**

Many Corrosives are "Water Reactive"

Most **Organic Reactives** must be segregated from **Inorganic Reactives** (metals)

Ignitables (Flammables/Combustibles)	Corrosives	
	Acids	Caustics
Carburetor Cleaners Engine Cleaners Epoxy, Resins, Adhesives, and Rubber Cements Finishes Fuels Lacquers Paints Paint Thinners Paint Wastes Pesticides that contain Solvents (such as Methyl Alcohol, Ethyl Alcohol, Isopropyl Alcohol, Toluene, Xylene). Petroleum Solvents (Drycleaning Fluid) Solvents: Acetone Benzene Carbon Tetrachloride (Carbon Tet) Ethanol (Ethyl Alcohol) Ethyl Benzene Isopropanol (Isopropyl Alcohol) Kerosene (Fuel Oil #1) Methanol (Wood Alcohol) Methyl Ethyl Ketone (MEK) Petroleum Distillates Tetrahydrofuran (THF) Toluene (Methacide, Methylbenzene, Methylbenzol, Phenylmethane, Toluol, Antisal 1A) White Spirits (White Spirits, Mineral Spirits, Naptha) Xylene (Xylol) Stains Stripping Agents Varsol Waste Fuels Waste Ink Wax Removers Wood Cleaners	Battery Acids Degreasers and Engine Cleaners Etching Fluids Hydrobromic Acid Hydrochloric Acid (Muriatic Acid) Nitric Acid (<40%) (Aquafortis) Phosphoric Acid Rust Removers Sulfuric Acid (Oil of Vitriol)	Acetylene Sludge Alkaline Battery Acids Alkaline Cleaners Alkaline Degreasers Alkaline Etching Fluids Lime and Water Lime Wastewater Potassium Hydroxide (Caustic Potash) Rust Removers Sodium Hydroxide (Caustic Soda, Soda Lye)
	Reactive Metals	Reactive Organic Compounds and Solutions
	Oxidizers Chlorine Gas Nitric Acid (>40%), aka Red Fuming Nitric Nitrates (Sodium Nitrate, Ammonium Nitrate) Perchlorates Perchloric Acid Peroxides Calcium Hypochlorite (>60%)	

2. Make sure that the affected employees are involved in the preparation of procedures or plans to handle hazardous chemicals. This is a good way to give employees ownership of the plans and a sure way to ensure that the plans will be implemented. If you hire outside consultants to develop these plans, it is critical that your employees are involved in the development process as well. The worst thing that can happen is for the consultant to prepare a fancy document that no one knows or cares about.
3. Review EPA's list of lists. This is a comprehensive list of chemicals that have been assigned statutory or regulatory reportable quantities (RQs). If you spill more than the RQ of a substance, you will trigger a federal reportable obligation that involves calling the National Response Center (NRC) at 1-800-242-8802.
4. Match your existing chemical inventory against the List of Lists and determine the RQs for the chemicals you have. Calculate the actual amount of a mixture that would have to be spilled to exceed the RQ. For example, if you have a mixture that contains 50% of a chemical having a RQ, you would have to spill more than twice the RQ amount to have triggered a federal reporting obligation. The critical thing here is to do the math before a spill occurs so that when the accident happens – often in the middle of the night, everyone knows exactly what to report.
5. Note that if you are in California, there is no RQ that will trigger reporting obligation to the California Emergency Agency. In California, you are required to report “*any release or threatened release of hazardous materials*” unless you can demonstrate that there is a reasonable belief that there is no significant present or potential hazard to human health, the environment or property.” (OES regulation 19 CCR §2730). In other words, the onus is on you to determine if you need to report to the state agency once you have a spill – regardless of the amount spilled. Remember that if you have exceeded the federal RQs, you will also need to report to the NRC. When in doubt, report it.
6. Get a copy of the Release Notification Form that the NRC uses and practice filling it out so that when the real thing happens, you and your staff will know exactly what to do.

7. Look for high hazard areas as you do your plant walk-through. Identify those areas that pose the highest risk of spills. These areas include drum storage areas, storm drain, propane tanks, ammonia tanks, chlorine cylinders, aboveground chemical storage tanks, etc. These are areas where spills are likely to occur. For example, you may want to set up internal procedures so that chemicals are not stored in the open air near any storm drains. Make sure you have sufficient secondary containment capacity to capture any spilled chemicals.



8. Make sure you have a system in place to replenish any spill control material that was used in a previous accident. As soon as you have consumed any spill control equipment such as sorbent material, your system should automatically prompt you to order replacements.
9. Evaluate the need for outside help. If you are a large facility, you may opt to have your own emergency response team to handle any chemical spills. On the other hand, if you are a relatively small company, you may choose to contract the services of an outside emergency response team to be on call when you have an accident. Be honest and realistic with yourself in assessing your need for outside help.
10. Have someone in your company be responsible for updating your hazardous waste contingency plan and SPCC (Spill Prevention Control and Countermeasures Plan). With the high turnover rate at most companies, the failure to maintain and update emergency response plans is one of the most frequently cited violations. And the main reason most companies get into trouble in this area is because those employees who are responsible for implementing the plans do not have ownership when they were being developed.

In sum, the key is to learn from others' mistakes. Do your homework in identifying your chemicals' RQs beforehand and have procedures in place so everyone knows what to do when a spill happens. Also make sure that your team members are involved in the development of any spill plans. This

is the surest way to ensure the plans are carried out. The NRC form and the List of Lists can be downloaded from the author's website.

Lessons from the BP Oil Spill of 2010

The massive oil spill from BP's offshore drilling rig began on April 20, 2010. It is officially the worst environmental disaster in US history.

There have been numerous government investigations into what caused the incident and how it could have been prevented. The Department of Justice initiated a criminal probe into the accident and a Presidential Commission was formed to look into the root causes of the incident.

Since then BP has pleaded guilty to various criminal charges, paid massive civil and criminal fines and spent billions in remedial actions and settlements with injured parties. The amount includes about \$1.25 billion in criminal fines, nearly \$2.4 billion to be paid to the National Fish & Wildlife Foundation and \$350 million to be paid to the National Academy of Sciences.



What can we learn from this environmental disaster? Here are some things that we know for sure at this point.

There is no such thing as a fail-safe system. Engineers and experts have assured the public repeatedly that an accident of such magnitude could never happen or are extremely unlikely to happen. Well, it happened. The experts have been proven wrong. In fact BP's 582-page emergency plan entitled "BP Gulf of Mexico Regional Oil Spill Response Plan" dated June 30, 2009 does not contain specific plans to deal

with an accident of this magnitude.

According to the plan, the TOTAL worst case discharge from an uncontrolled blowout from an exploratory well off shore was 250,000 barrels.

The low estimate from the federal government on the amount of oil spilled was around 20,000 barrels per day. That's 600,000 barrels per month and the spill began on April 20 and ended about 90 days later.

There was no detailed discussion on how to stop a deep water blowout in the response plan. There were no Plan A, Plan B or Plan C outlined in the plan to address this magnitude of a spill. There was no mention of "Top Hat" or "Top Kill" in the plan. That's why it took BP so long to stop the blowout. In fact, the Financial Times of London quoted BP's CEO on June 3 as saying it was "entirely fair" to criticize the company's preparations. The CEO went on to say that "what is undoubtedly true is that we did not have the tools you would want in your tool kit."

The second thing we know is that too many emergency response plans contain a lot of fluff and extraneous material just to make them look substantive and impressive. One would have thought that a 582-page document would have the room to cover ALL possible worst case scenarios – including a blowout of a size that matches what actually happened. But that was not the case.

The 582-page plan was prepared by outside consultants. There is evidence that parts of the BP plan contain boilerplate languages used by other plans elsewhere. One example that has been cited by the media and much to BP's embarrassment is that the BP plan actually listed walrus as among the Gulf of Mexico's sensitive biological resources.



We all know that walrus live in the Arctic and sub-Arctic regions. They simply do not live in the balmy waters of the Gulf of Mexico. The fact that no one caught this glaring mistake in the plan during the review process should be a cause of concern. The consultants who prepared this plan has offices in Alaska. A reasonable person could reasonably infer that the reference to walrus came out of a spill response plan that had been prepared for the frigid waters off Alaska.

Cutting and pasting did not work this time around. It seldom does, It also tells us that the regulatory agencies responsible for reviewing the BP plan missed the mark by a wide margin.

So what else does this 582 page plan tell us? Size does not matter. It is the content and specifically local contents that really count. Despite its massive volume, the plan contains none of the different remedies that BP has actually tried out since the spill. One valuable lesson we learn from this disaster is that next time when we prepare a spill response plan or a contingency plan we need to focus on site-specific environmental conditions and not pad those plans with boilerplate cut-and-paste languages and fluff.

All that flowery language in its 582-page has not helped BP plug that deep water well in a timely manner. Another valuable lesson we learn is that if we engage the services of an outside consultant or contractor to write our plan, we need to READ it carefully before sending it on to the agencies.

One final lesson we have learned is that if we spend a lot of money to develop a new manufacturing process to make a new widget, we need to also spend some money on how to control the pollution coming out of this new process. That's one thing the oil industry has failed to do. It spent billions of dollars developing new deep water oil drilling technology without considering new technologies to deal with spills at such great depths. One of the CEOs of big oil companies admitted that in a sworn testimony before a Congressional hearing.

Release Reporting in California

Release Reporting in California is different from Federal requirements. The program is administered by [California Emergency Management Agency](#) (Cal EMA) and local agencies. Cal EMA used to be called OES (Office of Emergency Services).

The law requires you to immediately report “any release or threatened release of hazardous materials”. However in practice, no report is required if you determine that “there is a reasonable belief that there is no significant present or potential hazard to human health, the environment or property.” (See OES regulation 19 CCR §2730).

Note that the burden is on you to make that determination. You must be able to justify your claim if you decide that reporting is not necessary. It is important for you to have documentation to back up your claim.

The reporting procedure is as follows:

1. Call 911
2. Call Cal EMA at 1-800-852-7550 or 916-427-4341
3. Call NRC (National Response Center) at 1-800-424-8802 for federal reporting if the RQ has been exceeded.
4. Follow up with written form (19 CCR § 2705) to local administrative agency and Cal EMA.



You must make your report as soon as practicable or **no later than 30 days** after the incident.

Release Reporting in Other States

Note that California is not the only state that has additional spill reporting requirements. Many other states have their own reporting procedures when it comes to spilled chemicals.

Below is a complete lists of state by state reporting requirements. The spill reporting requirements at the state level are summarized here based on information available from the state agencies' websites. Some phone numbers may have changed. Check your state agency's website for any updates.

Some states require reporting of spills of any amount regardless of the federal reportable quantities. Always check with your state to confirm the state's reporting requirements. Note that the Federal reporting requirements and Reportable Quantities apply in **ALL** states in addition to the states' individual requirements.

In general, if you are not sure about whether you should report a spill, report it!

State	Agency	Reportable Quantity (RQ)?	Where to report
Alabama	Alabama Emergency Management Agency	Federal RQ applies	1-800-843-0699
Alaska	Department of Environmental Conservation	Any amount	1-800-478-9300
Arizona	Arizona Department of Environmental Quality	Federal RQ applies	(800) 234-5677
Arkansas	Arkansas Department of Emergency Management	Federal RQ applies	800-322-4012
California	Office of Emergency Response	Any amount unless it does not impact human health, environment and property	1-800-852-7550
Colorado	Colorado Dept of Public Health and Environment	Federal RQ applies	1-877-518-5608
Connecticut	Connecticut Department of Environmental Protection	Any amount	1-866-337-7745
Delaware	Delaware Department of Natural Resources and Environmental Control	Federal RQ applies	1-800-662-8802

Florida	Department of Environmental Protection	All spills threatening population or the environment	1-877-272-8335
Georgia	Department of Natural Resources Emergency Operations Center	Any petroleum products that reach waters and cause a sheen	800-241-4113
Hawaii	Department of Emergency Services	Federal RQ applies	808-723-8960
Idaho	Idaho State Communication Center	Federal RQ applies	1 (800) 632-8000
Illinois	Office of Emergency Response	Federal RQ applies	800-782-7860
Indiana	Indiana Department of Environmental Management	All spills regardless of quantity	1-888-233-7745
Iowa	Department of Natural Resources	All spills regardless of quantity	515-281-8694
Kansas	Kansas Department of Health and Environment (KDHE)	All spills regardless of quantity	(785) 296-1679
Kentucky	Department for Environmental Protection	All spills regardless of quantity; 25 gallons of gasoline inside secondary containment	1-800-928-2380

Louisiana	Louisiana Department of Environmental Quality	Federal RQ applies	(225) 342-1234
Maine	Department of Environmental Protection	All spills regardless of quantity	800-452-4664
Maryland	Department of the Environment	Federal RQ applies	(866) 633-4686
Massachusetts	Dept of Environmental Protection	All spills regardless of quantity	888-304-1133
Michigan	Department of Environmental Quality		800-292-4706
Minnesota	Minnesota Pollution Control Agency	All spills regardless of quantity; 5 gallon threshold for petroleum	(651) 649-5451 or (800) 422-0798
Mississippi	Mississippi Emergency Management Agency	All spills regardless of quantity	1-800-222-6362
Missouri	Department of Natural Resources	> 50 gallons of fuel >25 gallons from UST	573-634-2436
Montana	Disaster and Emergency Services	Federal RQ applies	(406) 841-3911
Nebraska	Department of Environmental Quality	Federal RQ applies	(402) 471-2186
Nevada	Division of Environmental Protection	Federal RQ applies	1-888-331-6337

New Hampshire	Department of Environmental Services	Federal RQ applies	(603) 271-3899
New Jersey	Bureau of Emergency Response	All spills regardless of quantity	1-877-927-6337
New Mexico	New Mexico Environmental Department	All spills	505-827-9329
New York	Department of Environmental Conservation	All spills regardless of quantity; 5 gallon threshold for petroleum	1-800-457-7362
North Carolina	Department of Environment and Natural Resources	>25 gallons of fuel Federal RQ applies	800-858-0368
North Dakota	Department of Health	Any amount	701.328.5210
Ohio	Ohio EPA; LEPC and fire department	Exceeding Federal RQ	1-800-282-9378 or 614-224-0946
Oklahoma	Oklahoma Corporation Commission and Department of Environmental Quality	>10 barrels of material used for drilling; any amount that enters water; Federal RQ applies	(405) 521-2240
Oregon	Oregon Emergency Response System	Federal RQ applies	800-452-0311
Pennsylvania	Department Environmental Quality	All spills that could impact state waters	1-800-5412050; should contact regional offices
Rhode Island	Office of Emergency Response	Any quantity	(401) 222-3070

South Carolina	Office of Environmental Quality Control	Federal RQ applies	1-888-481-0125
South Dakota	Department of Environment and Natural Resources	Any quantity	605-773-3296
Tennessee	Emergency Management Agency	Federal RQ applies	800-322-8362
Texas	Texas Commission on Environmental Quality	RQ is 100 lbs for any chemicals that gets into Texas waters	1-800-832-8224
Utah	Department of Environmental Quality	Federal RQ applies	(801) 536-4123
Vermont	Department of Environmental Conservation	Federal RQ applies	1-800-641-5005
Virginia	Department of Emergency Management's	Federal RQ applies	1-800-468-8892
Washington	Department of Ecology	Federal RQ applies	1-800-258-5990
West Virginia	Department of Environmental Protection	Federal RQ applies	1-800-642-3074
Wisconsin	Department of Natural Resources	> one gallon of gasoline on a pervious surface	1-800-943-0003
Wyoming	Department of Environmental Quality	Any amount that enters waters	307-777-7781

13. Your Duty to Report to Agencies

When you have a release of chemicals exceeding the RQ, you have a duty to report that release to the National Response Center. Many states have their own spill reporting requirements as stated in the previous chapter. There are also other circumstances under which you may have to report an environmental event to the authorities.

There are also other instances you may find yourself in a situation where you have to report an incident to the authorities.



This chapter discusses the conundrum faced by an outside environmental auditor or an internal auditor such as an environmental manager who is performing an audit. The terms auditor and consultant are used interchangeably in this chapter.

During the audit, the auditor uncovers certain serious environmental violations that clearly pose imminent harm to the public and the environment.

What are this auditor's duties to report?

Consider this likely scenario. An environmental auditor performs an in-depth assessment of his client's operations under a contract that contains a confidentiality clause. The clause specifically prohibits the auditor from disclosing any information he finds during the course of audit unless the disclosure is required by law.

During the audit, the consultant finds out that his client is storing numerous drums of highly toxic wastes in a warehouse. The storage time of the drums has far exceeded the allowable 90/180/270 day accumulation time that would exempt the client from having to obtain a RCRA Part B permit as a Treatment Storage Disposal Facility. This is a potential criminal act under RCRA Section 3008(d). To make matter worse, the auditor finds out that the client has ordered his staff to gradually dispose of the wastes by pouring a couple of drums a day into a ditch just outside the warehouse. There is a public drinking water well 30 feet down gradient from the ditch.

What is the consultant to do?

He now has personally knowledge that several illegal acts are taking place at the direction of his client. Everything in his training tells him that it will be a matter of days before the drinking water supply will be contaminated with his client's toxic waste.

Should he report the findings to a regulatory agency in order to stop the illegal release? What about his confidentiality agreement with his client? Should he tell the client to cease and desist? What if the client refuses to heed his advice?

There are two schools of thoughts on this matter. The conventional wisdom is that the auditor should report his findings to his clients and nobody else since there is a confidentiality clause in his contract that forbids him to disclose his findings to anyone else unless required by law. There is no specific language in any environmental statutes or regulations that legally requires the auditor to report to the agency since he is neither the owner nor the operator. So that means the only way the auditor will have to disclose is in response to a subpoena or court order. Once he has advised his client to stop the illegal act, his obligations are fulfilled, according to this school of thoughts.

The other school of thoughts is that the auditor should tell his client to stop the illegal dumping immediately and report it to the agency if the client refuses to stop or report the release. The auditor would be violating the term of his confidentiality clause in the contract and may be subject to legal action from his client. But he will have stopped the commission of a crime in the face of imminent harm to the users of the drinking well.

If the auditor complies with the confidentiality clause, he may be exposing himself to another form of personal liability. What will the people who consume the contaminated drinking water supply think of his failure to take affirmative action to stop the imminent harm? Bear in mind that the auditor is not just an innocent bystander who happens to witness the commissioning of a crime. He is a trained professional with knowledge of the harm that the discharge will cause. Although the auditor is neither the owner nor operator of the facility, he has a relationship as an expert with the person who is committing the crime. He has inside knowledge. He has more persuasive power and sway than a bystander in terms of influencing the decision of the owner/operator.

The question is this: If he turns a blind eye to the on-going criminal act, is he edging closer to being an abetter?

What about the auditor's fiduciary duty to his client? Doesn't the auditor have a duty to act in the "best interest" of his client?

In terms of best interest, here are two possible outcomes when the client refuses to stop the illegal act and ignores the auditor's advice to report:

1. The auditor walks away after informing the client of the illegal act and the discharge continues and the drinking water supply is contaminated. The agency finds out a few months later and launches a criminal investigation. The client is prosecuted and convicted of environmental crimes and sent to prison for 5 years. The client's company pays a million dollar fines. The company faces a multi-million dollar lawsuit from the people who have been harmed by the illegal dumping.
2. The auditor takes it upon himself and reports his findings to the agency when his client refuses to act. The agency moves in and stops the discharge in time and fines the owner \$100,000 civil fine. There is no contamination to the drinking well.

Which of these two possible outcomes is **better** for the client from a fiduciary duty standpoint? Is the client's interest better served when the auditor discloses to the agency in spite of the confidentiality agreement? Or does the auditor's fiduciary duty ends after he informs his client of the illegal act?

What if the auditor is an attorney? Does he not have a duty as an officer of the courts to disclose the illegal act?

There have been two conflicting court decisions on this subject. The Supreme Court of New Jersey ruled in May 1996 in the case of *Carvalho v Toll Brothers* that "an engineer has a legal duty to exercise reasonable care for the safety of workers on a construction site when the engineer has a contractual responsibility for the progress of the work, but not for safety conditions, yet is aware of working conditions on the construction site that create a risk of serious injury to workers." So even the engineer was not hired to monitor safety conditions, the court ruled that he had a duty to report known unsafe condition.

Yet a recent case in 2011 in the Superior Court of Pennsylvania ruled that “an engineering firm retained by its client to monitor toxic emissions from a beryllium plant, had no duty to report findings that beryllium particulate emissions belching from the plant "significantly exceeded" EPA limits to either the EPA or to members of the public." This ruling flies in the face of the New Jersey Supreme Court ruling. Note that the Superior Court in PA is often the last arbiter of legal dispute since the Supreme Court in PA rarely rules on its findings.

So we have a state Supreme Court decision in conflict with a state Superior Court ruling.

In terms of the auditor’s LEGAL duty to report, it is clear that there are no black and white answers to this dilemma.

However - from an ethical and liability standpoint, the path for the auditor when faced with an imminent danger situation is clear.

If the auditor happens to be a Professional Engineer, his obligation to report the on-going criminal activity to the authority is PARAMOUNT - even if he has signed a confidentiality agreement with his client.

Consider a similar example: A Professional Engineer was hired by a building owner to inspect the structural integrity of a building that he plans to sell. The client swore the engineer to secrecy, The engineer discovered that the building was unsound and could collapse any time and informed his client. The client ignored the findings and proceeded to sell the building without disclosing the fatal defects to the buyer.

At this point, the engineer had an absolute duty to report his findings to the authorities in order to stop the sale and protect the general public. If he failed to do that, he could lose his license and be sued by the people who ended up being injured when the building collapsed. His obligation to report overrides the confidentiality clause.

14. How to Make Effective Presentations

PowerPoint by Microsoft has become the *de facto* tool that many people use for making presentations. Unfortunately, many presenters fail to use PowerPoint in an effective manner. The most common error people make is to load up their slides with bullet points and/or text that the audience can barely read from afar.

EXEMPTIONS FROM

❖ Most were noted in Block 1:

- Photographic silver reclamation/removal (HSC 25143.13)
- Aerosol can puncturing/draining (HSC 25201.14 gone!)
- Acid/base neutralization at food processing or biotech facilities
- Demineralizer acid/base neutralization
- Formaldehyde/gluteraldehyde Tx per approved method
- Oil and fuel filter draining or crushing
- Combining 2+ wastestreams if no Tx benefit occurs
- Passive phase separation in tanks & containers
- Passive evaporation of water component
- Filtering out solids when adding to tank or drum

We see that at conferences all the time. The speaker puts up a slide with 14 bullet points and starts his talk with “I know you can’t see this.....”

This chapter discusses how you should make your presentation whether you are making it to someone within your organization or to an audience of your peers at a technical conference.

Do not confuse your PowerPoint presentation with your written report. They are not the same. Your report should contain all the details of what you plan to do for your audience written out in complete sentences and paragraphs.



The biggest mistake many people make is to try to use PowerPoint to cram 10 bullet points on each slide to summarize all the technical details. The end result is a distillation of some important information that will inevitably be lost in the hierarchical structures of the bullet points.

A classic example of the misuse of PowerPoint can be seen as a result of the following tragic incident.

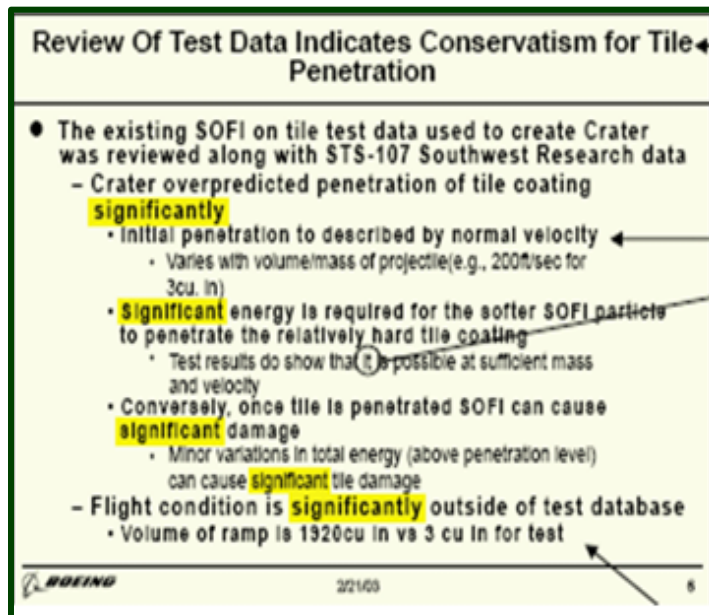
When the Columbia space shuttle broke up in re-entry to the Earth’s atmosphere in 2003, the White House appointed the Columbia Accident Investigation Board (CAIB) to look into the causes. As part of the investigation, the CAIB looked into how those engineers and contractors at the National Aeronautical and Space Agency (NASA) transmitted their

technical information to their management. The Board observed that “generally, the higher information is transmitted in the hierarchy, the more it gets ‘rolled up,’ abbreviated, and simplified. Sometimes information gets lost altogether, signals drop from memos, problem identification systems, and formal presentations. The same conclusions, repeated over time, can result in problems eventually being deemed non-problems”.

The Board also found that one avenue by which information got “rolled up” and confused, was through the technology of PowerPoint presentations.

When NASA discovered that a piece of foam had fallen off the shuttle during take off and had impacted its wing, a team of engineers and scientists began a series of analyses to assess any risk that such impact would have upon re-entry. The concern was that the damage done to the wing during take off might impair its ability to withstand the tremendous heat that would be generated when the shuttle began its re-entry into the Earth’s atmosphere. That turned out to be the fatal cause of the incident.

On Day Nine of the mission, the engineering team presented the results of its risk assessment findings to NASA management in a PowerPoint presentation while the shuttle was still in space. One of the critical slides



used in the presentation contained six levels of hierarchy.

According to the Board, important engineering information was either “filtered out or lost in the small prints within the bullet points.”

The CAIB concluded: “When engineering analyses and risk assessments are condensed to fit on a standard form or overhead slide, information is inevitably lost. In the process,

the priority assigned to information can be easily misrepresented by its placement on a chart and the language that is used. . . . As information gets passed up an organization hierarchy, from people who do analyses to mid-level managers to high-level managers, key explanations and

supporting information is filtered out. In this context, it is easy to understand how a senior manager might read this PowerPoint slide and not realize that it addresses a life-threatening situation. . . . The Board views the endemic use of PowerPoint briefing slides instead of technical reports as an illustration of the problematic methods of technical communication at NASA.”

In other words, more information got condensed and reduced through bullet points as it moved up the chain of command. By the time it got to the decision makers, some critical information was lost.

When you open up your word processing program, the screen is in portrait format – just like a book or your technical proposal. On the other hand, the PowerPoint screen is always in landscape format. In other words, the width of the screen is always larger than the height. It is just like your TV screen or the movie you watch in a theater.

That is precisely the reason why you should NEVER cramp your PowerPoint presentation slides with words or bullet points. Visuals work a lot better in landscape format. That’s why the movies you watch in the theatre do not have words written all over the screens.

IPowerPoint is a visual communication tool. It is not a written communication tool like your reports.

Presentation of an idea is really an art. It consists of three components:

Contents.	These are the ideas in your presentation.
Composition.	This is the right amount of details in your presentation.
Performance.	This is how you deliver your presentation.

Each of these three components is a necessary but not sufficient condition for success in conveying your idea to your clients. All three must be present and done well for you to succeed. A good outcome will only happen when all three components are done well.

A presentation with good contents and composition but poor performance will yield a bad outcome. Your clients will either not understand your great ideas at all or if they do they will say to themselves: “Well, the ideas seem fine but we don’t much care for the presenter.”

A presentation where all three components are bad will of course result in rejection.

A presentation with bad contents and composition but excellent performance will likely get this response: “Well – we don’t care much for the ideas but he seems likes a nice fellow.” Another rejection will be sure to follow.

In other words, your performance at the presentation can be no better than the material you are presenting. But good material or ideas can be easily ruined by bad performance. And this happens often.

The First Five Slides are Most Important

You can use as many slides as you need in your presentation. But make sure you present only ONE point per slide. The bad habit of jamming 12 bullet points in a single slide really started some 30 years ago when people had to pay someone to make 35 mm slides for their projector. And the cost was \$3 or \$4 per slide. So people jammed as much information as possible into a single slide in order to save money.



Remember: You can now make as many PowerPoint slides as you need. They are all FREE!



If the presentation you are making is highly technical in nature, the details of the content should be in your written technical report.

The most effective way to do a presentation is to tell a story by framing the setting , identifying the characters in the story, describing the starting point and the ending point. The ending point is the place you want to be. Your presentation is to offer ideas on how to get from the starting point to the ending point.

Like a Hollywood movie. You are telling a story when making a presentation.

The first five slides in a presentation are the most important ones. Cliff Atkinson - the author of "Beyond Bullet Points" - suggests you tell your story this way:

1. Define the setting
2. Identify the players
3. Describe the imbalance (the place where the players find themselves)
4. Describe the balance (the place where the players want to be)
5. Offer a solution (show they can get there)

Imbalance is *what exists*, the balance is *what is desired*, and the solution is specifically how you propose to *bridge the gap* between what exists and what is desired.

The key point to remember is that much of the presentation will be done by you, the presenter. The headlines and graphics in each slide provide only the visual impact and backdrop for your story telling. Your story is not a novel because you do not need to spend a lot of words describing the setting. The visuals in your slides do that for you. Your presentation is really more like a movie script supported by PowerPoint's graphics and visual effects.

For the audience, it is like watching a movie or documentary with you as the narrator – going from scene to scene.

Note that each slide should contain only one complete sentence (that's the headline) and it should be supported by simple graphics or photographs that reinforce the message contained in that single headline. The headline should be written in conversational tone.

Research in multi-media presentation has shown that given this format, your audience will quickly scan the headline and sit back and pay attention to what you have to say. This is a much more effective way for you to communicate your ideas to the audience than to have them dart around ten bullet points or trying to read a massive amount of text on the screen.

Dr. Richard Mayer, a well-known authority on multi-media research and Professor of Psychology at the University of California in Santa Barbara, has done extensive research in the field of multi-media presentations. His findings can be summed up as follows:

1. It is better to have both words and graphics on the presentation than to have just words alone.
2. People learn better when corresponding words and pictures are presented simultaneously and near each other on the screen.
3. The presentation is more effective when there are no extraneous words, pictures and sounds.
4. Animation with narration works better than animation with on-screen text

Using the principles described above, here are 5 simple slides prepared by a consultant to persuade a multi-national corporation to hire his firm to perform environmental audits.

The 5 slides frame the story by describing the setting, identifying the protagonist, outlining the imbalance and balance and offering a solution.

Slide #1: The setting

Environmental laws allow citizens to sue companies for violations



This slide provides the setting for the story: Congress has enacted environmental laws that allow private citizens to take companies to court if the agencies fail to take enforcement action against the violators.

It answers the question “where are we?” for the audience.

Slide #2: The people

Large companies with violations and deep pockets are most vulnerable



This slide identifies your clients as the protagonist in the story. It answers the question “who are we in this setting?” for the audience.

It tells your clients that if they have on-going violations of their permits, they could become targeted.

Slide #3: The imbalance (starting point)



This slide shows the imbalance in the story. Those environmental groups could come in and sue your clients and disrupt their business. Your clients are exposed to this imbalance because they have deep pockets and also they have on-going violations.

Slide #4: Balance (the end point)



This slide offers your clients a way to be rid of the imbalance and return to normalcy. You then start the process of bridging that gap.

Slide #5: The solution



This slide provides a possible solution to your client to restore balance. This is the bridge from imbalance to balance.

After these initial 5 slides, the consultant then goes on to tell his prospective client that he has arrived at a solution to solve their problems. This is where the consultant goes through the details of his auditing plans with his client. He will add as many slides as he needs but each slide will have only ONE complete sentence describing a main point of his program. So if he has twenty main points to make, he adds twenty slides.

Your PowerPoint presentation is a direct reflection of your ability to converse with your audiences. They are going to judge your performance based on how well they like the presentation – your story. Here are a few pointers to keep in mind:

1. Show passion in your presentation. It was the German philosopher George Hegel who said: “Nothing great has been accomplished without passion.” It is very important for you to show passion when you are presenting your slides. Your audience needs to know that you



truly believe in what you are saying. They need to get the sense that your presentation is the most important presentation you have ever made in your career. Your passion must show through. In other words, the best presentations are the ones that carry high voltage.

When you present your reasons for your ideas with passion, the combination will work magic.

In his book “Moving Mountains – the Art of Letting Others See Things Way”, Henry Boettinger states that “passion and reason can cut through the fabric of doubt, inertia and fear” that your audience may have about your idea. Passion and reason are like the blades of a pair of scissors. Neither one can cut the fabric alone.

2. Focus your audience’s attention on you. Do not load the slides down with words that are mostly unreadable. Even if they are readable, you should refrain from using them because the text on the screen can be a great distraction to your audience. You want them to listen to what you have to say rather than try to decipher what’s on the screen.

The best way to get attention is to give it. You want your clients’ attention on you. So when you do your homework and demonstrate that you truly understand what you are saying, you will get attention from your audience.

Another way of keeping your audience's attention is to vary your tone of voice throughout the presentation. Never use a monotone. At various stages of your talk, your tone could go from slow to fast, loud to soft, humorous to serious and melancholic to joyful. Use plenty of interesting and out-of-the-ordinary examples. If you are describing an aerodynamic equation, explain to the audience how it describes the flight of a bumble bee. Examples like that would certainly keep your audience's attention on you.

The difference between a presentation with variety and one without is like the difference between a river and a canal. If you are floating down a river, it offers you different surprises at every bend. You may go from farmland to gorges to forest just by floating along. A canal, on the other hand, is a man-made ditch that is straight and not very interesting.

A good presentation is a river. A bad one is a canal.

3. Your presentation is not about your ego. It is about your ideas. So avoid reciting your qualifications ad nauseam. If you are making a presentation at a conference, the fact that you are now before your audience making a presentation means that they already know something about you. Or they know you well enough to offer you their valuable time to listen to your ideas. Make your introduction really short and get on with presenting your ideas.
4. Make sure your presentation is concise and to the point. Sometimes less is better. You want to focus your presentation on the key points and not on some peripheral information. If you focus, you will show your audience that you have taken the extra time and effort to distill complex issues into an understandable format. It gives them a level of comfort in listening to you.

Do not fall into the trap of wanting to tell them everything and hoping something will stick with the audience. It usually doesn't work that way. All that does is confuse your audience. You will end up with comments like: "What is he getting at?" It is better to repeat a few good points in your presentation than to cover a lot of good and bad points once.

You certainly don't want your client to describe your presentation as "a tale told by an idiot; full of sound and fury, signifying nothing."

It is not necessary for you to cover all possible combinations and permutations in your presentation. You employ a technique known as "cognizant omission" used by many professional speakers. For example: You start by telling your audience that you have looked at all possible scenarios and you have narrowed them down to three that are worthy of further discussions. In that way, no one in the audience is going to think that you have ignored or overlooked some salient points of your argument.

And if you feel that you have persuaded your audience to your way of thinking, stop. Do not keep pressing your point. In other words, quit while you are ahead and stop drilling when you strike oil.

Extremely brevity is of course just as bad as excessive verbosity. It forces your audience to guess at what you are trying to say. If you can strike the proper balance between this and verbosity, you will have achieved elegance – a term easier to recognize than to describe. In mathematics, an elegant solution is one that is arrived at with the least number of steps in the least convoluted manner.

5. Remember that a presentation is a "conversation". You are talking to your audience. It should not be a monologue. In any conversation, there should be at least two people involved. So try to engage your clients early during your presentation. Get them to talk to you too or at least acknowledge your presence! The best way to do that is to invite your audience right up front at the beginning of your presentation to interrupt you any time they have any questions – up to a point. You don't want to be spending 10 minutes of your valuable time answering a peripheral question from one member of the audience. But you do want to engage the audience. It is a delicate balance you need to maintain. When your audience starts asking questions, it is a clear sign that they are paying attention to you and they have engaged you and you'd better have some pretty good answers.

That's probably why Henry Boettinger used the word "dangerous" in his definition of presentations. This brings us to the next point.

6. Always prepare for any anticipated questions. As you go through the rehearsal, ask yourself what kind of questions will your audiences be asking about your presentation? Make sure you have answers to all these questions. If you are going to suggest any new or not-so-well-known technology as part of your proposal, you should know that someone in the audience will have doubts about it. That doubt may linger in his mind throughout the entire presentation and he may not even ask you any question about it. But the doubt will be there.

What you need to do is to address any anticipated doubt, concerns or fears that your audience may have before anyone raises them. For example, you can say: "We understand this is a relatively new technology. However our research has shown that it will work in your situation. Here are some specific case studies of how your competitors have used this technology to great success." The bottom line is that you do not want any doubts to fester in your audience's minds.

Very often, someone in the audience may fear that your new idea or concept may make his own idea look bad. If that is not going to be the case and you sense that fear, you should address it right away and reassure the individual that your new idea is really quite compatible with his. Ease his fear head on so that he can re-focus his attention on your presentation.

7. Be sure to make contact with your audience. The best way to get your message across to your audience is to establish some sort of rapport or connection. If there is an opportunity for you to meet the audience before your presentation, take full advantage of it. Talk to them. Get as many names as possible and remember them. During the presentation, you can establish connection with your audience by making eye contacts with them. You want them to feel that you are having a private conversation with them.
8. Pay attention to your posture during your presentation. If at all possible, do not spend all your time standing or hiding behind a lectern with both hands firmly grabbing the sides. Stand in front of it or lean against it with your elbow. Walk around it once in a while if you can. The point here is to have as much free space between you

and the audience. This reinforces the idea of intimacy with your audience. You are having a direct conversation with them.

Remember those Presidential debates? The candidate who does well at these debates is usually the one who takes the trouble to walk out in front of the lectern or into the audience when answering a question from a voter. By doing so, the candidate is seen as making connection with the voter.

9. State the problems clearly and early. The first task you ought to do at the presentation is to clearly state the problem. If your audience does not see a clearly defined problem, it becomes restless, bored and resentful to your ideas. You identify for your audience a clear description of the problems that you are planning to solve for them. Do not fall into the trap in which many enthusiastic inventors find themselves when presenting their inventions to venture capitalists. These inventors are so excited about their inventions that they jump right in and describe how their new discoveries work. After ten minutes or so of listening to such display of energy, the audience say to themselves or worse yet out loud; “So what?” These inventors fail to tell the audience up front what problems their inventions are designed to solve. They fail to clearly state the problem.

The same bad outcome can befall a consultant if he starts his presentation by telling his audiences how great his company is and how many offices he has in so many countries. The response is also going to be: “So what?” unless that information is really relevant to the problems at hand.

In the 5-slide example shown in this chapter, the stated problem is your clients’ potential liability to citizen lawsuits. You state it early on in the presentation and then proceed to offer a solution to minimize your client’s liability.

10. Be forceful in your presentation. Show self confidence. No one want to listen to a mousy or timid person. Whatever you do, don’t let them see you sweat. And don’t let them see your fear or nervousness. You may be the world’s expert on the topic at hand, if your audience sees you sweat, some of them will think that’s because you are not sure of your subject. This judgment is probably unfair to you. But perception

is reality. Your audience will always expect you to have more knowledge than they do on your presentation topic. After all, that's why they have invited you to give them a talk on your ideas. When they sense that you are nervous and seemingly unsure of yourself, they will tune you out and reject your ideas altogether.

Remember that people seldom buy an idea without first buying the originator of that idea. They will judge your ideas by the way you present them.

11. Make sure you maintain continuity. If you have multiple presenters at your meeting with your audiences, you want to make sure that the individual presentations are tied in together and they are coherent. The best way to do that is to insist that each presenter makes specific reference to either the one presentation before or after him. There is nothing more irritating to an audience than to listen to five seemingly disjointed presentations from the same team.
12. Always start with an opening statement that holds your audience's interest. There are really four subject categories that will perk up an audience. These are: royalty, religion, sex and mystery. As a consultant in the technical arena, your choices are pretty much restricted to mystery.

Here is a possible opening statement that will hold the attention of the audience:

“Thank you for the opportunity to speak with you. I would like you all to picture this scene. We are at the reception after a very successful shareholders' meeting of a multinational corporation. The CEO is very pleased that his preferred slate of directors for his Board has been approved by a majority of the shareholders. He and his guests are enjoying the fine food catered by a world famous chef. Just as he is getting ready to go up to the podium to give a speech to thank the shareholders who have supported his slate, a well-dressed man walks up to him and hands him a document. It is a letter from an environmental group giving the CEO 60-day notice that it intends to file a citizen lawsuit against his company for failing to meet his waste water discharge limits in his permit. We are here to present to you a proven way that your company can inoculate against such lawsuits.”

This statement sets the stage and offers an element of mystery leading the audience to wonder what that proven inoculation might be.

13. Never read text off your slides and never apologize. There are two things you should never do. You should never read text word-for-word. And you should never apologize for any short comings that you may think you have in your presentation. It is impossible for many people – except professional actors – who can read a text to an audience and make it sound conversational. Once you start doing that and all your audience can see is the top of your head, you lose eye contact with your audience and they get bored. You should not apologize because if your apology sounds like false modesty, your audience will notice and will be resentful. If your apology is sincere, the audience will soon find out about your incompetence.

There was this business development manager for a large consulting firm who made a presentation at a hazardous waste training seminar. He stood up before the audience and started to apologize for the fact that he was neither an engineer nor scientist and had little grasp of the technical knowledge in his presentation. He then proceeded to read out loud word-for-word 30 pages of text on hazardous wastes that someone had apparently handed him in the morning. And he left the podium. Before he finished, several members of the audience stood up and asked: “Why did we pay \$1000 to listen to you read out loud on something you know nothing about?”

14. Try to speak your audience’s language. Do not use technical jargons especially if your clients are not engineers or scientists who are familiar with your jargons. You cannot expect your audience to understand and accept your ideas if you speak a language they do not understand. It shows disrespect for your clients and nothing good will come out of it. Even a non-English speaking foreigner who is charged with murder will get a translator to tell him what is happening in court. Why shouldn’t your client get the same rights?

You should also avoid using a lot of acronyms. Experts in their own fields are notorious for doing that. They assume their audience is familiar with those acronyms and pepper their talks with them. An

instructor at a seminar on the Clean Air Act did that one time and the entire class was in a near coma after he had used his 15th acronym.

15. Understand the difference between accuracy and precision. In your presentation, you should use accurate statements with the appropriate amount of precision necessary to tell your story. The following example illustrates the point. If you are giving direction to someone who is trying to reach the Los Angeles Airport from San Diego, here are three possible directions:

“You can find the Los Angeles Airport in Southern California.” This is an accurate statement but it lacks sufficient precision to be of any benefit to the driver.

“You can get to the Los Angeles Airport from San Diego by taking 405 North and going for 125 miles. There will be signs along the freeway to direct you to the airport.” This is an accurate statement with proper amount of precision to get the driver to his destination.

“The Los Angeles Airport is located at 33° 56’ N and 118° 24’ W. in Southern California.” This statement is also accurate but probably has too much precision for the driver. It is not necessary to provide the longitude and latitude.

16. Keep your presentation SIMPLE. Keep it simple and good things will happen. This is one of the many sound advices given in the book “The Power of Simplicity” by Jack Trout. Simplicity is at the heart of many success stories in business. Here are some examples of simplicity at work:

One of the reasons for Papa John’s Pizza’s success is that it keeps its operation simple. Every location has the same mixer, same water purification system, same oven and same computer system. It makes operation that much simpler for everyone involved.

Southwest Airlines has similar simplicity at work. By flying the same model aircraft in its fleet, it makes maintenance and training much easier. The airline has no assigned seating. That makes boarding the plane quicker and it shortens the turnaround time at the gate. That in

turn translates to higher utilization rate for its airplanes and greater profit. Simplicity is the key in both examples.

Always present your ideas in bite size chunks. Never lump ideas together. Here is an example:

What does the following mean to your audience?

KGBIBMNASACIAFBI EPA

Not much.

Now if you break this into bite size chunks, you audience will understand it:

KGB IBM NASA CIA FBI EPA

Another elegant example of simplicity is something you see everyday on the Internet. Look at Google's search engine web page and you will see simplicity.

There is no clutter. No banner ads. Just type in the term you want to look for in Google. It is that simple.

Here is what Jack Welch said about simplicity when he was interviewed by Harvard Business Review in 1989 while he was CEO of General Electric: "Insecure managers create complexity. Frightened, nervous managers use thick convoluted planning books and busy slides filled with everything they've known since childhood..... They worry that if they're simple, people will think they're simple minded. In reality, of course, it's just the reverse. Clear, tough minded people are the most simple."

17. Use common sense in your presentation. Common sense is defined as "native good judgment free from emotional bias or intellectual subtlety." When you are not sure what material to use in your presentation, try to see things as they really are. Use your common

sense. If you have serious doubt about including certain material in your presentation, don't use it.

18. Never memorize your entire presentation. You want to maintain a certain level of spontaneity. You are having a conversation with your audience. Remember the key points of your talk but don't come off sounding like a robot.

Handling nervousness during the presentation

Don't ever let them see you sweat.

The best antidote to nervousness is a combination of knowledge and preparation. If you know the topics being presented, you will be able to speak about it with confidence. If you have done your homework and have thought about the questions that might be asked of you at the presentation, you will be less nervous.

Consider this example: What would happen to you if someone handed you some detail notes on Einstein's Theory of Relativity and ask you to make a presentation to a group of physicists and be prepared to answer any questions on the topic? It would be very natural for you to have extreme anxiety unless you are a physicist and you are thoroughly familiar with the Theory of Relativity.

You know that if you spend all week memorizing the notes, you can give a flawless presentation. And yet you are still nervous. Why is that? Because deep down you also know that as soon as some physicist starts asking you questions, you are going to fall flat on your face. It is this realization that makes you nervous.

It is common to have stage fright. Even accomplished public speakers feel that anxiety pang before getting on the podium. They have butterflies in their stomachs and sweaty hands – just like everybody else. The nervousness comes from a fear of the unknown – of not knowing how a group of strangers will react to the presentation. It is a very natural and normal response. All speakers have it. What sets the good speakers apart from the crowd is that they are able to manage or minimize that fear. Here are some practical ideas on how to do just that:

1. A very effective way to overcome your nervousness is to think about the last time you accomplished something with great confidence. Relive that moment in your mind. Some people have found that if they “anchor” that feeling of confidence to some tangible action like tucking at their sleeves or holding onto a pointer, they can relive that same confident moment during their presentation.
2. Another very effective way to overcome stage fright is to get to know your audience before you speak. Try to learn as much as possible about your clients and their organizations. It is exactly like going to a job interview. You want to impress your future employer with your knowledge of his company. If you know the names of the people on the selection panel, Google them and find out more about them. The point here is to make yourself feel as comfortable as possible about the people to whom you are going to be presenting. It makes your audiences a little bit less like complete “total strangers” to you. This is the reason many successful public speakers make a point of mingling with the audience before getting up on the podium. It is a great way to overcome the fear of the “unknown”.
3. Try to focus on the presentation and not on yourself. Your presentation is not all about you. Remember that your audiences are judging your presentation based on your knowledge and ability to answer their questions. They are not there to rate you as an orator.
4. Establish and maintain eye contact with your clients. Speak to them as if they are your colleagues or friends. The more “contacts” – both verbal and non-verbal - you have with your audience, the less they seem like “total strangers” to you. Treat your presentation as a conversation with your audience.
5. Remember that stage fright is most pronounced before you speak. It is a feeling generated by uncertainty. People who are not able to overcome their stage fright often believe erroneously that the fear they have before they speak will get worse once they get on the podium. The reverse is true. The butterflies in your stomach will fly away and your sweaty hands will dry up once you get into talking about topics that you know so well. Also remember that very often your audience will not even notice how nervous you are. We are often

a much harsher judge of our own performance. That's why you should never tell your audience that you are nervous.

15. Setting Up an Environmental Management System

On September 1, 1996, the International Organization for Standardization finalized its ISO 14001 EMS standards. The term “iso” refers to the Greek word for “equal”. These standards are designed to be “equal” globally. Many companies and organizations are getting into the act of getting ISO-certified. Even the Federal Government is getting involved. In April of 2000, a Presidential Executive Order (EO#13148) directed all federal agencies to have developed and implemented some forms of EMS by the end of 2005.

It is important to keep in mind that ISO 14001 is not a legal requirement. It is a voluntary set of management standards that may improve your environmental performance.



EPA encourages industries to adopt these standards but offers no specific incentives (such as reduced frequency of inspections) in return. Nonetheless, the benefits of ISO 14001 EMS standards are numerous.

Many companies get ISO certification for business or marketing reasons. Simply put, they do it because their industrial customers require it. If your largest customer tells you that you need to be ISO certified in order to continue to do business with them, you get certified. Others adopt the standards in order to improve their environmental performance.

In either case, companies with an ISO 14001-like EMS are seeing many benefits, even if they are not certified. For example, with an EMS in place, they find out that:

1. All their employees are now receiving consistent level of training.
2. Their employees are operating out of a common set of standard operating procedures.
3. The general public now has a better perception of the organization.
4. Their environmental liability is reduced.
5. Their waste management costs are now lower.
6. They now have a better overall environmental compliance record than before.

The ISO 14001 EMS standards are in many ways a common sense approach to environmental management. It may surprise some of you that you already have many of the key elements of an EMS in place within your organization.

This chapter outlines **some** of the practical steps you can take to develop and implement an ISO 14001 EMS.

The first step you need to do is to secure the visible support of your senior management. An effective EMS must have top-down support that is visible to everyone in the company. You will also need a senior officer in the company to be the “environmental person in charge”. This person must have the confidence of senior management and has the authority to plan, enforce and maintain your EMS. This is also the person you go to get the resources you need to implement the EMS.

Environmental Policy

You then need to develop an Environmental Policy and have your CEO sign off on it. The Policy is the framework on which your EMS is based. In developing the policy, be realistic and do not over promise. And remember that your Environmental Policy represents your company’s vision to your employees and the rest of the world. So you want to make sure you keep the promises made in the policy. Keep your environmental policy simple. Do not clutter it up with idealistic prognostications that sound good on paper but are hard to implement. The policy should clearly state the company’s commitment to continual improvement and pollution prevention as well as its commitment to comply with applicable environmental laws and regulations.

Once prepared, the policy must be communicated clearly to all employees and other interested third parties. To do that, you can post your environmental policy throughout the plant – similar to the way your safety policies are posted. You can also include the policy in your employee newsletter or post it on your intranet and company website.

Planning

The next step is planning. This is by far the most difficult step. You need to identify all the “significant environmental aspects” of your operation. ISO 14001 defined an “environmental aspect” as an “element of an organization’s activities, products, or services that can interact with the environment.” So you need to look at what you do throughout your company that affects the environment – both positively and negatively. Some examples of these environmental aspects would be air emissions, wastewater discharges, hazardous waste generation, heat generation, consumption of raw materials, and recycling of waste products.

The best way to do this is to involve your line supervisors and have them go through the process of identifying these environmental aspects. The more people involved in the process, the more ownership your employees will have. An effective EMS also requires bottom-up involvement in addition to top-down support.

The term “significant” is not defined in the ISO 14001 standard. So it is up to your team to determine what is significant and what is not. Do not get hung up on an endless legalistic argument over this term. A general rule of thumb is to consider both the severity and frequency of the impact resulting from a specific aspect. Other factors you should look at include the following: Is the activity regulated by law? Does it have the potential to harm public health or the environment? Does it affect your neighbors and community?

As part of the planning step, you need to set up your company’s pollution prevention goal. For example: Do you plan to reduce your hazardous waste generation by 5% or 10% each year? Whatever your goals may be, make sure they are realistic and implementable. And make sure you have the resources to meet the goal. If your goals are so high and lofty that your company fails to meet them during the first year, it may have a demoralizing effect on your employees. Take small steps instead. You can always set higher goals later. Remember that your EMS is a living document – a work in progress.

Implementation

The next phase is implementation. Here you set out the procedures by which your company implements its planned goals and objectives. This is where the rubber meets the road. All your procedures must be clearly documented. Management of documents is an essential element of an EMS. You need to have someone in charge of updating your procedures and ensuring that outdated procedures are removed from use. For example, you will need to set out procedures on how you stay current on environmental regulations that affect your operations. There is nothing more dangerous than using outdated regulations.

Records control is also paramount. Your EMS must ensure that your environmental records are accurately kept and easily accessible to those who need them. For example, all your hazardous waste manifests and related papers should be kept at one central location and one person should be responsible for getting the signed copy back from the disposal company.

Bear in mind that “documents” and “records” are not the same. Documents tell you what you need to do. Records are proof that you have done it. The difference between “documents” and “records” is that documents can be changed and records cannot. For example, the Standard Operating Procedures you have for running a wastewater treatment plant is a document. Your monthly Discharge Monitoring Reports that you are legally required to submit to the agency is your record. Your audit checklist is a document. Your completed audit checklist is a record.

Your implementation step will also include emergency planning and training of employees. Prevention of chemical accidents should be a top priority in your EMS. The key here is to assign specific responsibilities to individuals for safe handling and storage of chemicals. Make sure that someone is responsible for checking the Safety Data Sheet for safe storage conditions. Many accidents occurred because incompatible chemicals were stored together. Know what chemicals you have on hand and develop contingency plans to deal with them before you have a spill. These are all elements of an effective EMS. Chapter 12 discusses how to prevent chemical accidents.

In terms of training your employees, your EMS should identify who should receive what level of environmental training based on needs. Both the operator who generates and handles hazardous wastes and the clerk who fills out the hazardous waste manifests require training – but not at the same level of intensity. Also focus your training on areas and personnel that have significant environmental aspects. Your training requirements and procedures should be clearly spelled out in your documents. Evidence of training received should be contained in your training records.

Audit

ISO 14001 is predicated on the continual improvement concept of Plan-Do-Check-Act-Review. As stated earlier, this concept must be part of your policy. Now that you have planned and implemented an EMS, it is time to check it by performing an audit. The audit can be done internally by your own staff or externally by outside auditors. Whichever way you go, you must ensure that you have the financial resources and management commitment to fix any problems you uncover in the audit in a timely fashion. This is particular critical if your audit uncovers some serious non-compliance legal issues. Failure to correct known violations quickly can and will be used against you in enforcement cases.

ISO standards require you to keep detailed records of all your audit results if you are planning on getting certified. That's the price you pay for certification and all the benefits that come with it. If you are not interested in getting ISO 14000 certified, you may wish to forego the extensive audit reporting requirements. Having a detail paper trail can be a huge liability. Your attorney will probably sleep a little bit better at night. Having an EMS in place without the certification will still get you many of the benefits. Regardless of whether you record your audit results, you should always do everything you can to fix any uncovered problems in a timely manner.



Senior Review

The last step in the continuous improvement cycle is for your senior management to review the status of your EMS and make improvements as needed. Your environmental officer in charge should play a lead role in this

effort. It is recommended that you do a complete review of your EMS at least once a year.

Practical Environmental Management System Checklist

This checklist provides you with some practical ideas on how to meet some of the key elements of an ISO 14001 EMS. The first column lists the suggested actions you could take in the next month. The second column gives you the reason or benefit for doing it.

Prevent and Prepare for Chemical Spills:

Use secondary containment or overpak drums	It reduces chance of a chemical spill
Determine your Reportable Quantity before you have a spill (use our list of lists)	It ensures prompt reporting
Put one person in charge of maintaining MSDS and updating chemical inventory	It ensures nothing is left out
No purchase of new chemicals without review by EHS personnel	You will know what chemicals you have; you may avoid buying carcinogens
Have EHS check MSDS before chemicals are stored	This will avoid storage of incompatible chemicals that has led to many accidents
Inspect your chemical and waste storage areas weekly and document the inspections	This is a proactive preventive measure; also weekly inspections are required by law
Assign one person in charge of following through on any deficiencies found during weekly inspections	To make sure things get done and have accountability
Require written reports of chemical spills and share the same with all plants	Good idea to share knowledge to avoid same mistake elsewhere
Summarizes clearly and concisely spill reporting procedures (i.e., who is going to report what to whom) before hand	To ensure that everyone knows what to do after a chemical incident

Permit Compliance

Make sure copies of all permits are located in one central filing system	It makes it easier for you to locate all permits in preparation for an inspection
Review treatment process and operational procedures if permit condition is exceeded by a certain percentage (say 10%)	To identify operational/ compliance problems before they become recurring violations
Assign one person to follow up on any corrective action	To make sure that it will be done
Have plant manager sign off on all corrective actions	To ensure accountability of management
Have a second person double check all calculations on mandatory reports to agencies (such as Discharge Monitoring Reports and air emission reports)	To ensure accurate reporting to agency
Establish a “one-week prior to deadline” rule: All reports must be completely one week before the deadline	To ensure timely completion and submittal to agencies; probability of making mistakes increases as deadline approaches.
Incorporate SPCC and Storm water Pollution Prevention Plan checklists <u>as part of</u> your daily plant walk through	To ensure compliance with the plans
Make sure the folks who are required to implement the SPCC and SWPPP are involved in the development of these plans	Plant and employee ownership is critical to the success of any plan

Hazardous Waste Management and Superfund

Document the weekly inspection of waste storage area	To ensure accountability and timely corrective actions
Have someone review the weekly inspection report and follow up on any corrective action	To ensure accountability
Make sure operations and maintenance are involved	Ownership is the key here

Remove all hazardous wastes within 30 days if you are a Large Quantity Generator	You cannot spill what you don't have on-site
Assign one person in charge of updating the RCRA Contingency Plan	Failure to update the Plan is one of the most frequently cited violations
Waive purchasing Department's lowest bidder rule when you are selecting a waste hauler and TSDf for your hazardous waste	You don't want to go with "Bob the midnight hauler" even if he is the lowest bidder.
Review all manifests every 3 months and summarize waste activities	Identify errors early and also helps you in preparing your biennial report in 2002
Establish a central filing system for your manifest and lab results	This helps you organize and present your material quickly if you get inspected

Environmental Policy

Prepare a concise policy statement and have senior management sign off on it. The statement could be as simple as: <i>"This company will comply with all applicable environmental laws and regulations and will ensure its employees receive the necessary training for them to carry out their duties. The company will conduct periodic review of its operation to ensure compliance with this policy"</i>	ISO 14001 requires it. EPA and Department of Justice expect it. It is also good management practice.
Make sure your environmental policy is communicated to all employees. For example, post it next to all your safety notices.	This is key in any Environmental Management System. Policy is useless unless your employees know about it.
Every time you walk through the plant, you are conducting an audit in your head. Sit down with the plant manager or engineer and have them correct any deficiency.	This frequent evaluation helps you identify problems and correct them before they become too costly later.

Establish a policy of reporting all significant non-compliance issues to senior management immediately	To ensure accountability and follow-up
Make sure your in-house attorneys understand your operation. Invite them down for a plant visit so they know what kind of widgets you make	It makes for a much easier conversation when you need to consult with your attorneys during an agency inspection.

Many companies sign on to ISO 14001 because their customers won't do business with them without it. If your organization is under no market place reasons to get certified and yet you would still like to have an effective Environmental Management System (EMS), Here are some simple practical steps towards this goal.

Step 1. Get Top Down Support. You need to have someone within your organization who will support the idea of implementing an EMS. This person must be a member of senior management and have access to the Management Board within your organization. Without the support of this individual, your chance of success will be greatly diminished. This person can be a vice president or even the chief financial officer of the organization. In fact, the more involvement this person has with finances the better. Any senior official within the legal department or quality control department would do well too.

Step 2. Write Down Your Policy. Define a roadmap or vision of how your organization plans to operate within the confines of environmental compliance. Some people call it the Environmental Policy. What you end up calling it is less important than how it ends up driving the performance of your operations. This policy needs to state clearly the steps your organization will take to achieve excellence in environmental performance. Once you have articulated this policy, make sure that all of your employees are made aware of it.

Step 3. Assign Responsibilities. Look around your organization and see if you can find people who are willing to take on the responsibilities of environmental compliance and also be accountable for the performance. One effective way is to hold plant managers accountable for environmental performance – in much the same way that they are usually held accountable for safety performance. You will find that senior management generally has a much keener awareness or keenness in safety

performance – much more so than on environmental issues. This is not necessarily always a reflection of management’s human concern for their workers’ safety although one would like to think so. Very often it is because they see a cost (Workers’ Comp) directly associated with work-related injuries and are thus able to “manage” the cost by putting the necessary resources behind it.

There are no comparable and concise monetary yardsticks for environmental compliance. Management often does not see the “costs” of environmental non-compliance until it is too late and therefore does not know how to manage it proactively. Remember that Corporate America manages by the quarters because Wall Street demands quarterly reports.

Step 4. Train Your People. Make sure the people who are involved in your EMS are qualified. You need to provide them with the necessary training. At a minimal, these folks need to understand the basic requirements of environmental regulations. This is a very important issue given the high turnover rate in personnel. More and more companies are assigning new people environmental responsibilities. You need to make sure these people get the basic training. They do not all have to be environmental experts. But they need to know enough about regulations and various requirements to ask the right questions.

Step 5. Set Broad Environmental Objectives and Targets. One of the most effective ways to sell your EMS to senior management is to demonstrate realistic objectives (or goals) that will result in real cost savings. For example, you might want to focus on reducing generation of hazardous wastes or toxic air emissions. Both of these activities carry large social and bottom line costs to your organization. Here is a classic example: If you can reduce the amount of hazardous air pollutants in your solvents by getting your supplier to reformulate the products, you can substantially reduce the amount of toxic air emission and hazardous wastes from your operation perhaps to the point of not needing a major permit such as Title V under the Clean Air Act. Many companies have done just that. If you can set this as an objective and have a realistic target date for reducing a fixed amount, you should have no problems in persuading senior management to go along.

Step 6. Be Helpful. If you are helpful to the operation folks, you will have much better chance of success. You need to develop simple and straight

forward sets of procedures in the event of environmental emergencies. For example, develop some simple steps on what the plant is supposed to do if it has a chemical spill so that the operations people will know exactly what to do and whom to contact. Avoid legalese and regulatory jargons when you write these procedures. If the instructions are too complicated, people will not follow them. Don't tell the third shift operator that if there is a spill of chemical exceeding the Reportable Quantity (RQ) in pure chemical form, he will have to report to NRC under EPCRA. All of this is Greek to him.

You need to predetermine the amount of a mixture that needs to be spilled before the RQ is exceeded and just write into the procedures that if that predetermined spill amount is exceeded, the operator will need to alert someone with the organization and so on.

Step 7. Involve Your Staff. Try to involve as many of the operational folks as possible in developing any environmental plans such as storm water pollution prevention plan or SPCC. Ownership to these plans is critical to their success. The more the plant personnel are involved, the more ownership they have for the plans and the more likely they are going to do a good job in implementing these plans. After all, do people wash their rental cars before returning them? The answer is no because they don't own them,

Step 8. Conduct Periodic Internal Review. Every time you walk through the plant, you are in effect performing an internal "audit" of some sort. When you see something wrong during the walk through, go seek out the person in charge and have a discussion on how to correct the situation. Support the effort by helping your plant in obtaining funding to fix the problems. Document the efforts taken by the plant.

Step 9. Choose Your Vendors and Consultants Carefully. Be very careful when you choose your consultants and vendors. Remember that your outside consultant represents you before the regulatory agencies. How this person communicates with the regulators on both a professional and personal levels directly affect the agencies' perception of your organization. If your consultant is antagonistic towards the regulators, you will be the one paying the price in the long run. In choosing vendors for your environmental services, you need to be aware of the long term liability associated with many environmental operations. If your hazardous waste hauler dumps your wastes in a ditch in the middle of the night because the

hauler was the lowest bidder of all three quotes you got earlier, you have just incurred a much higher cost and level of liability for your organization.

Step 10. Learn To Manage Agency Inspections. Chances are excellent that you will have a close encounter with an inspector at one time or another. You need to have a set of internal procedures on what to do before, during and after an inspection. There are many dos and don'ts when it comes to agency inspections. Read Appendix VII about managing an agency inspection. It is also critical that you know how to manage the outcome of a "bad" inspection. If at all possible, fix any problems that an inspector uncovers before he or she leaves your premise. Always try to resolve any inspection issues at the lowest level within the agency. The higher you go within the regulatory chain of command, the less control you are going to have in the process.

If you follow these ten simple steps, you will have the essence of an effective Environmental Management System without incurring the cost of getting certification.

In its "Compliance-focused Environmental Management System-enforcement Agreement Guidance" document dated December 2001, EPA outlines the 12 elements of an effective environmental management system.

The US EPA EMS Model

The US EPA model includes 12 elements which are summarized below:

1. Environmental policy.
2. Organization, personnel and oversight of EMS
3. Accountability and responsibility
4. Environmental requirements
5. Assessment, prevention and control
6. Environmental incident and noncompliance investigations
7. Environmental training, awareness and competence
8. Environmental planning and organizational decision-making
9. Maintenance of records and documentation
10. Pollution prevention
11. Continuing program evaluation and improvement
12. Public involvement and community outreach.

Of all these 12 key elements, three of them are paramount.

The first one is accountability. For an EMS to be effective it must have accountability. There must be a system within which bad behaviors by employees are penalized and environmentally proactive actions are rewarded. Without accountability on both end of the spectrum, employees may falsify reports due to fear of management retribution. There would be no incentive for employees to identify environmental problems and suggest solutions.

The second key element of an EMS is program evaluation and improvement. An effective EMS must provide for periodic independent auditing of environmental functions with well defined procedures to correct any deficiencies that are uncovered in the audit. It is pointless to go through an elaborate auditing process if there's not going to be a well-defined set of procedures to follow through with remedial actions. Without follow through, the audit would just be a meaningless paper exercise. Read my earlier post on what happens when you fail to implement your own audit findings. By the way – do not use audits to establish an attorney-client privileged condition in order to hide environmental noncompliance. This will not work since only the actual audit report itself is protected under attorney-client privilege and not the underlying facts.

The third major key element is thorough investigation of any environmental incident in a timely manner. An effective EMS should immediately trigger a thorough investigation when an environmental incident occurs. Such investigation should be designed to find the root causes of the incident and to demonstrate promptness and completeness in your responses to the incident.

One last point: Whatever environmental management system you may use, it needs to be enforced by management at all levels. Like all environmental plans, your EMS must be performance-based. Having a well written EMS document is just a start. It is meaningless if it is not communicated to all your employees and enforced throughout the organization.

16. Key Elements of California Specific Requirements

California Environmental Protection Agency

Cal EPA is a coordinating agency established by the state legislature in 1991. It reports to the Governor's Office. The current Secretary is Matthew



Rodriquez - an attorney formerly with the Attorney General's Office in California. He

was appointed to the post by Governor Jerry Brown in July of 2011.

The Cal EPA Secretary does not run the day-to-day operation of the agency. He oversees the environmental activities of the Air Resources Board, California Integrated Waste Management Board, State Water Resources Control Board, Office of Environmental Health Hazard Assessment, Department of Toxic Substances Control, Department of Pesticide Regulation, and the approximately 4,500 employees that serve the state's diverse environmental programs. Cal EPA offers guidance and sets the Governor's environmental policies.

Other agencies under the authority of the Governor's Office are:

- California Emergency Management Agency (Cal EMA). This used to be the Office of Emergency Services (OES) until it was reorganized in January 1, 2009 with the addition of homeland securities functions. The website remains www.oes.ca.gov. The head of this office chairs the State Emergency Response Commission. It also administers the California Accidental Release Prevention (CalARP) program. Local Emergency Planning Committees report to OES.
- Department of Health Services. This agency sets drinking water regulations and certifies environmental testing labs.

There are many other local agencies that also regulate the environment. Examples are:

- City/county/regional sanitation districts.
- City/county fire and health departments.
- CUPA (Certified Unified Program Agencies)

Certified Unified Program Agencies (CUPAs)

These agencies were created in 1993 under Senate Bill 1082 to “consolidate and coordinate” permits, inspections and enforcement for:

- Hazardous Materials “Business Plans”
- California Accidental Release Prevention Program
- Underground Tank Program
- Hazardous Waste Generators and onsite treatment
- California Uniform Fire Code



Many of the CUPAs are your local fire departments. Always check with your state and local agencies!

Unique Elements in California Laws and Regulations

In California, you can find environmental laws and regulations in the following sources:

- California Health and Safety Code
- California Code of Regulations (CCR)
 - Title 17 (Air Resources Board regulations on air)
 - Title 19 (Emergency Management Agency regulations on hazardous materials)
 - Title 22 (Environmental health, hazardous wastes and Prop 65)
 - Title 23 (Water Resources Control Board regulations on water)

Here is a summary of some environmental compliance requirements that are specific or unique to California:

California Requirements	Federal Counterparts
Used oil is a hazardous waste	Used oil is not a hazardous waste
One-year or 55 gallons in Satellite Accumulation Area whichever comes first	No time limit

Must report all releases unless there is no significant impact on property, health or the environment	Reportable quantities apply for releases
Severe restrictions on neutralization of corrosive wastes	Elemental neutralization allowed.
Extremely hazardous wastes	EPA's acute hazardous wastes are a subset of California's extremely hazardous wastes
Hazardous Material Inventory Form (aka the Business Plan) is needed	Tier II reports are due every March 1 of each year. It is less stringent than California's Business Plan.
California has its own hazardous waste codes in addition to the RCRA waste codes	RCRA hazardous waste codes
Partially empty aerosol spray cans are now universal wastes in California	Partially empty aerosol spray cans are not federal universal wastes.
Asbestos containing material is a hazardous waste in California	Asbestos containing material is not a RCRA hazardous waste. It is a Superfund hazardous substance.
Hazardous waste generators must mail copies of their manifests to the state agency	No such requirement under EPA regulations
If a hazardous material is improperly packaged or mislabeled, it would become a hazardous waste over time.	No such requirement under EPA regulations

Prop 65 Law

The Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop 65) was a California initiative passed in 1986 and became effective January 1, 1987. The law is contained in the Health & Safety Code §25249.5 et seq. It requires the Governor to designate chemicals that are “known to the state



to cause cancer or reproductive toxicity” based on detectable presence and existence of exposure. Prop 65 requires a 2/3 majority in the state

legislature to change and is well tested in courts.

There are about 500 chemicals on the Prop 65 list which is updated by the Office of Environmental Health Hazard Assessment ([OEHHA](#)) every few months or so. You can download the latest list from OEHHA's page under CalEPA's website. You can also subscribe to the agency's [listserver](#) for updates on the list via email.

The following entities are **excluded** from Prop 65:

- Businesses with fewer than 10 employees
- Government agencies
- Water utilities
- Employee personal use unknown to employer

Prop 65 requires Exposure Warning

Once a chemical is listed as a Prop 65 chemical, you have 12 months to provide warnings for knowing and intentional exposures. Discharges of such chemical to California's drinking water sources are prohibited 20 months after listing.

Excerpt from a recent list

STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT
SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986

CHEMICALS KNOWN TO THE STATE TO CAUSE CANCER OR REPRODUCTIVE TOXICITY
December 4, 2015

The Safe Drinking Water and Toxic Enforcement Act of 1986 requires that the Governor revise and republish at least once per year the list of chemicals known to the State to cause cancer or reproductive toxicity. The identification number indicated in the following list is the Chemical Abstracts Service (CAS) Registry Number. No CAS number is given when several substances are presented as a single listing. The date refers to the initial appearance of the chemical on the list. For easy reference, chemicals which are shown underlined are newly added. Chemicals or endpoints shown in ~~strikeout~~ were placed on the Proposition 65 list on the date noted, and have subsequently been removed.

Chemical	Type of Toxicity	CAS No.	Date Listed
A-alpha-C (2-Amino-9H-pyrido [2,3-b]indole)	cancer	26148-68-5	January 1, 1990
Acetaldehyde	cancer	75-07-0	April 1, 1988
Acetamide	cancer	60-35-5	January 1, 1990
Acetazolamide	developmental	59-66-5	August 20, 1999
Acetochlor	cancer	34256-82-1	January 1, 1989
Acetohydroxamic acid	developmental	546-88-3	April 1, 1990
2-Acetylaminofluorene	cancer	53-96-3	July 1, 1987
Acifluorfen sodium	cancer	62476-59-9	January 1, 1990
Acrylamide	cancer	79-06-1	January 1, 1990
Acrylamide	developmental, male	79-06-1	February 25, 2011
Acrylonitrile	cancer	107-13-1	July 1, 1987

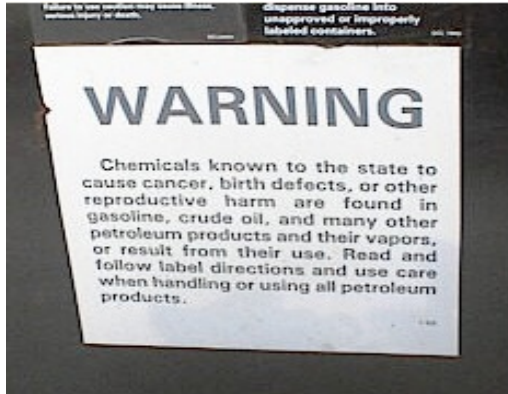
A business that knowingly and intentionally exposes any individual to a listed chemical must provide a clear and reasonable warning unless the business can prove the exposure is insignificant. Example of Warning Language: This product (or area) contains a chemical known to the State of California to cause cancer (birth defects or other reproductive harm). Special language is used for food and alcoholic beverages.

Chemical Meeting the Criteria for Listing as Known to the State to Cause Cancer

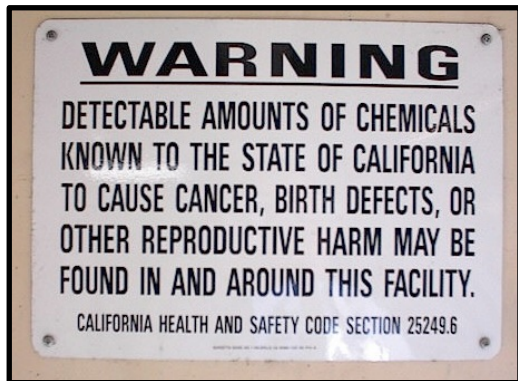
Chemical	CAS No.	Chemical Use	Reference
4-Methylimidazole	822-36-6	Used in the manufacture of pharmaceuticals, photographic chemicals, dyes and pigments, cleaning and agricultural chemicals, and rubber. Fermentation by-product in cattle fed ammoniated forage and in certain food products including caramel coloring, soy sauce, Worcestershire sauce, wine, and ammoniated molasses.	NTP (2007)

Prop 65 chemicals can be found in many commodities and foods. For example, gasoline we put in our cars has benzene in it.

Cigarette smokes and secondary smokes are Prop 65 chemicals. So is marijuana smoke. Soya sauce, Worcestershire sauce, wine and molasses have 4-Methylimidazole (a Prop 65 chemical) in them.



For example, a gas station in California would have to display the following sign since Gasoline contains benzene - a Prop 65 carcinogen.



A restaurant that serves alcohol beverages must have the following sign since alcohol is a Prop 65 chemical that causes reproductive toxicity.



If your facility provides a designated smoking area for you employees, you will need to put up the following sign since tobacco smoke (including second hand smoke) has been determined by the State of California to be a carcinogen under Prop 65.



This is a sign on a factory fence indicating that the facility has one or more Prop 65 chemical on-site.

Insignificant exposure

You do not have to provide warning IF you can demonstrate that your chemicals pose “insignificant exposure”.

Insignificant exposure under Prop 65 means an exposure that will cause less than 1/100,000 increase in cancer risk.

No Significant Risk Levels (NSRLs) for carcinogens means a daily intake level of one excess cancer case in 100,000 over a 70-year lifetime. For example, the NSRL for formaldehyde is 40 ug/day. OEHHA has listed NSRLs for certain chemicals. These are known as Safe Harbor data and are available on its website.

Some Examples of Safe Harbor Levels

Carcinogen	(ug/day)	Reference
Formaldehyde (gas)	40	22 CCR12705(c)
Lead	15 (oral)	22 CCR 12705(b)

Maximum Allowable Daily Levels (MADLs) for reproductive toxins are 1,000 times the No Observable Effects Level.

Chemicals causing reproductive toxicity Level (ug/day)

Benzene	24 (oral)
Cadmium	49 (inhalation)
Toluene	7000

Types of exposures under Prop 65

There are three types of exposures under Prop 65:

1. Consumer products: This involves labels or retail signs. If you sell a product that contains any of the Prop 65 chemicals in California, you must provide a warning label with the product. A very common example is gasoline stations.
2. Workplace exposure: This includes product labels, workplace signs or Hazcom compliance. If your workers are exposed to any prop 65 chemicals, you need to warn your employees about that. The best way is to do it through your mandatory hazardous communication under OSHA. You also need to warn your visitors who come to your facility that they are being exposed to Prop 65 chemicals. A very effective way to provide warning to visitors to your facility is to include a Prop 65 warning statement on your visitor's log book. By signing your visitors' log book, they are also acknowledging that they have read your Prop 65 warning.



3. Environmental exposure: This includes signs, quarterly mailings or media notices. If you have a release of Prop 65 chemicals that could reach your neighbors, they need to be warned about the presence of these chemicals either via a local newspaper notice or mailings. Here is an example: If you use natural gas in your afterburner to incinerate your VOC emissions, you are generating formaldehyde (a Prop 65 chemical) since it is a byproduct of natural gas combustion. You will need to calculate how much formaldehyde is emitted through your stacks and how much of it is deposited at the front porch of your next

door neighbor who sits near your fence line. There are desk top computer models that can help you calculate the amount. If the amount exceeds 40 ug per day (the safe harbor level for formaldehyde), you will need to notify him.

Enforcement of Prop 65 is carried out by the state's Attorney General, district attorneys, certain city attorneys, and private citizens. There is a bounty hunter provision in the law that allows anyone who is successful in turning you in for Prop 65 violation to get a percentage of your penalty.

Two Famous Prop 65 Enforcement Cases

In 2006, the State of California filed a lawsuit against Pepsico alleging that it used refillable bottles that were painted with ceramic labels containing lead. Lead is a Prop 65 chemical. The company settled with the State by agreeing to the following conditions:

- Pay \$1,000,000 civil penalty
- Pay \$725,000 Attorneys fees
- Pay \$500,000 to the California Public Health Trust Institute

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA FOR THE COUNTY OF LOS ANGELES	
PEOPLE OF THE STATE OF CALIFORNIA, ex rel. BILL LOCKYER, Attorney General and ROCKARD J. DELGADILLO, Los Angeles City Attorney, Plaintiffs, v. PEPSICO, INC., a North Carolina corporation, Defendant.	Case No.: COMPLAINT FOR CIVIL PENALTY AND INJUNCTIVE RELIEF (Health and Safety Code § 25249.5 et seq. and Business and Professions Code § 17200)

Luck Grocery Chain's 17 distribution centers were sued by California Attorney General, NRDC, Environmental Law Foundation, and Coalition for Clean Air. The alleged violation was that the company was exposing employees and nearby residents to the diesel fumes caused by its diesel-powered vehicles at the 17 distribution centers.

The company was sued for failure to provide warning to the affected people. The settlement included:

- Environmental groups received \$895,000 for attorney fees and costs
- Warning signs to be posted at the distribution centers
- Mailed warnings sent out to thousands of residents near the distribution centers.
- Trucks can only idle engines for up to 3 minutes.
- 150 alternative fuel vehicles to be phased in

Changes to Prop 65

There have been many abuses of the Prop 65 enforcement mechanism. Environmental groups used to send out mass mailings to Fortune 500 companies doing business in California and allege Prop 65 violations without any evidence to back it up. Their main purpose was to get some of these big corporation to pay them money just to be rid of the nuisance of any pending possible litigation. This was known as "green mail".

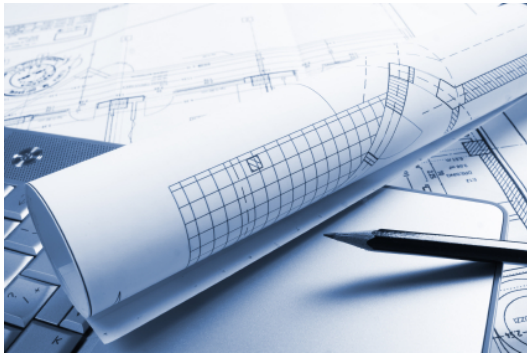
In reaction to such abuses, the state legislature passed SB 471 in January 1, 2002 to require the party suing to provide a Certificate of Merit to the Attorney General's office. Plaintiffs also must now prove environmental or occupational exposure as well as prove showing lack of warning.

They can now no longer simply send out blanket notices-to-sue to companies without such specific knowledge.

17. A Blueprint for Environmental Compliance

Have you ever wondered why some companies never seem to get into trouble with the EPA or OSHA? You never see any bad press about them on TV or read about them in the newspaper.

And then you see some other companies that seem to be constantly in trouble with the agencies for environmental violations.



What sets these companies apart?

Simple.

The good companies do things that bad companies don't.

Here are some practical tips on how to avoid compliance nightmare. Most of them have been discussed in details in this book. They form the blueprint for environmental compliance.

1. Make sure you have an environmental policy that is signed by the CEO of your organization and communicated to **all** your employees. You should post it on your company website and on the bulletin board in your employees' cafeteria. An environmental policy is a simple declaration by senior management on how it plans to conduct its business in the context of the environment. The latest buzz word is "sustainability". It means do no irreversible harm to the environment and save it for the next generation.
2. You should have a designated senior company officer whose job it is to oversee environmental and safety compliance. This person should have the confidence of senior management and have the clout to muster the necessary financial resources and institutional commitment to implement the company's environmental policy and plans.
3. Check EPA's website and your local agencies' websites on a regular basis. This is the best way to stay on top of emerging regulations. Subscribe to these agencies' mailing lists so you will be informed of any new development.

4. Make sure there is someone within your organization who is responsible for keeping track of environmental records and documents including regulations that impact your operation.
5. Make sure that you have a simple and straightforward emergency response plan. The main purpose of such a plan is to tell your employees what they need to do when something goes wrong. It must be concise, realistic and easy to understand. Do not make the same mistake that a major oil company did with its Oil Spill Response Plan in the Gulf of Mexico that failed to identify the worse case scenario and was lacking in realistic responses. None of the efforts made by the company following its massive oil spill was contained in the original plan even though it was over 580 pages long.
6. Make sure that your employees have ownership of your company's environmental plans. In other words - the employees who have been charged with the responsibility of implementing an environmental plan should have been involved in some manner in the development of the plan. That is the only way they will have ownership of the plan and without ownership, nothing will be done.
7. Develop Best Management Practices (BMPs) to the extent that your budget allows you to do so. BMPs can provide an added layer of protection for you since they go beyond legal requirements. Try to incorporate most or all of the elements of an ISO 14001 EMS into your operation. You do not necessarily need to get certified. But these best practices will help you immensely in your day-to-day operation.
8. Be sure to perform environmental due diligence prior to shipping your hazardous wastes to your Treatment Storage and Disposal Facility (TSDF). Check up on their compliance history by going to EPA's Environmental Compliance History Online (ECHO) webpage. Never cede this responsibility to your transporter. If you ship wastes to a site that turns into a Superfund site, your company would be responsible for the entire cleanup cost of that site together with other generators. The joint and several liability clause in the Superfund law can be very unforgiving.

9. If you are planning on leasing a piece of property, make sure you perform a baseline environmental study on the site to identify any pre-existing conditions. In this way, when you return the leased property back to your landlord at the end of the lease, you only need to return it in the same condition that it was in when you started the lease. Otherwise, your landlord will tell you that he gave you a pristine property and you would have no way of proving that it is not so.
10. Always maintain a good, cordial and professional relationship with the regulatory agencies. Do not waste your limited financial and human resources in constant battles with the agencies. In most cases you are going to lose since the agencies have the laws on their side. Always negotiate with them in good faith and NEVER play games with them. If you have credibility with an agency, you are more than half way there.
11. Train and retrain your employees. The companies that stay in compliance are the ones that make sure their environmental professionals receive the necessary training to do their job. The companies that are constantly having environmental violations are in that situation because their employees are not trained and equipped to do the job. Make sure you document all your training records.
12. Never automatically go with the lowest bidders when hiring vendors or consultants. Always go with the most qualified contractors who will ensure compliance with environmental laws and safety standards. There are liabilities in this area. You are not purchasing paper clips.
13. Designate an employee whose job is to review Safety Data Sheets prior to storing any new chemicals. Many chemical accidents are caused by mis-placement of new chemicals that are not compatible with existing ones. Check out EPA's chemical incompatibility charts in this book.
14. Stay on top of emerging new environmental regulations by subscribing to agencies' free e-mail services. Check the agency's website at least once a week. You can also subscribe to commercial services to keep abreast of the latest regulatory developments. Your trade association can also help you keep current with the latest regulatory developments.
15. Always know your chemical spill reporting requirements before the actual spill occurs. Many states have additional spill reporting

requirements that are more stringent than the federal requirements. Do your homework. You should match your inventory of chemicals against EPA's List of Lists and determine the reportable quantities of each of these chemicals. So when you actually do have a chemical spill in the middle of the night, you will know exactly if the reportable quantity has been exceeded thereby triggering a reporting obligation.

16. Instruct your employees to never lie to an agency inspector. Tell them they should always be forthright with an inspector. Answer all questions truthfully when asked but they should not volunteer any information or speculate.

17. Be very careful with your e-mails. Always assume that your e-mails will appear on the front page of your local newspaper the next morning. If you do not want people to know about something, don't put it in your email. For example, if you have just conducted a mock inspection of your facility in anticipation of an actual inspection and you have found a number of violations, it is absolutely not necessary for you to send out a broadcast e-mail to everyone stating that you have uncovered contained violations. What you want to do is to focus on fixing the problems you have uncovered rather than broadcasting your problems to the world in writing.

18. The same strategy should apply after you have had a bad inspection. Instead of sending out an e-mail to everybody stating that the inspector has found numerous violations during the inspection, you should send out an e-mail to everybody reminding them of all the things that they should be tending to without making any reference to the inspection. In that way you achieve the same goal-getting people to improve their performance-without admitting to those violations.

Don't send out email like this!

To:	Everyone under the sun!!!
Cc:	the entire universe
Bcc:	
Reply To:	
Subject:	Violations

Hello everyone!

We just had a very bad inspection. The inspector found 21 violations at our waste storage area.

We got caught!

Regards,

Your Plant Manager

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19. Always follow up on your internal audits in a timely manner. Never perform an internal audit unless you have the financial resources and management commitment to fix any problems that might come up during the audit. If your financial resources are not sufficient to cover all the problems uncovered in your audit, prioritize the problems to be corrected and document all your efforts in fixing them.
20. Voice objection as soon as you are made aware of potentially illegal activities within your organization. If anyone within your organization - especially at the senior management level - should suggest any kind of illegal activities, you must speak up against it forcefully. Remember: your silence is often taken as your acquiescence in the eyes of the agencies.
21. Review all those agency inspection manuals to get an understanding of what an inspector would be looking for when he shows up.
22. Understand how agencies select targets for criminal prosecution and make sure your organization does not fit those targets. EPA and the US DOJ have internal memos that discuss the criteria they use to select enforcement targets.

In sum, remember the 5 major skills needed for an effective environmental manager:



1. Knowledge of environmental regulations.
2. Ability to work with regulatory agencies.
3. Knows how to hire and fire consultants.
4. Knows how to present ideas effectively.
5. Knows how environmental laws are enforced.

Appendix 1 : Overview of Environmental Regulations

This appendix provides an overview of the key elements of some major federal and California environmental regulations.

California's regulations are often more stringent than EPA's. After a federal program is delegated to a state, EPA always retains oversight authority over it and can override it anytime.

In California, environmental programs are fathered delegated to the Certified Unified Program Agency (CUPA). You need to know your CUPA. In many instances, your CUPA may be your county fire department.

Visit websites of EPA and CalEPA often and sign up for their mailing lists. You must put up warning signs if you have Prop 65 chemicals. Most people have Prop 65 chemicals.

The following are key elements of all the major environmental regulations that are discussed in Norman Wei's 2-day environmental compliance seminars. The complete course content is available in a 400-page ebook available for purchase at www.proactenv.com.

Enforcement and Liability

1. Bad things happen to bad people. Most people who have been prosecuted for environmental crimes have a history of bad acts.
2. Minor environmental non-compliance situations - if unattended for too long - can fester into serious environmental crimes.
3. Always speak up and take action if you see someone contemplating environmental violation within your organization.
4. Silence is acquiescence in the eyes of the agencies. Your failure to act to prevent an illegal act can be viewed as your tacit approval for the act.
5. Environmental violations carry stiff penalties because they often impact public health and safety.

Clean Water Act

1. A discharge permit is required if you plan to discharge pollutants to the navigable waters of the United States.
2. Each state is required to set up water quality standards designed to protect existing beneficial uses and ensure non-degradation.
3. Wastewater discharge limits are set based on water quality standards and federal effluent limitation guidelines.
4. EPA has right of veto over waste discharge permits that you negotiate with the state.
5. Falsifying Discharge Monitoring Reports under the Clean Water Act is a felony. Make sure you double check the accuracy of your reports.
6. Obtain a mixing zone if possible if you are applying for a direct discharge permit. It can save you significant amount of money.
7. Your pre-treatment permit with the city works pretty much the same as a direct discharge permit.
8. The Spill Prevention and Countermeasure Plan (SPCC) regulations do not include containers smaller than 55 gallons.
9. The 1320 gallon threshold for SPCC is based the shell capacity of the container holding oil and not the actual amount of oil in a tank.
- 10.SPCC applies to only the owners and operators of a facility that exceed the threshold. If you neither own nor operate a transformer substation on your property, you do not need to include the shell capacity of the transformer in your threshold calculation.
- 11.The SPCC Plan is a performance-based document. You are expected to perform according to what is stated in the plan.
- 12.You can do a self-certified SPCC plan if your shell capacity is less than 10,000 gallons.
- 13.Always do what you say you are going to do in your plan! Never promise more than what you can physically do. If an outside consultant is preparing the plan for you, make sure the consultant does not over-promise.
- 14.You can often get out of storm water permit through structural and procedural changes. An example would be building a roof over your outdoor chemical storage area. Another example would be to move your operation indoor.

Clean Air Act

1. Clean Air Act is all about protecting human health.
2. Ambient air is defined as 5 feet above ground beyond your facility boundary. EPA has jurisdiction over ambient air; OSHA has jurisdiction over indoor air.
3. Try to get a Federally Enforceable State Operating Permit (FESOP) if you can by voluntarily placing restrictions on your operating hours or solvent usages to get below Title V threshold.
4. The type of air permit you get depends on the air quality of where you are located.
5. In an attainment area where the air quality is good, you have to demonstrate non-degradation through a Prevention of Significant Deterioration (PSD) permit.
6. In a non-attainment area where air quality is poor, you have to obtain offsets for your emissions under your new permit.
7. Cap-and-trade is a well tested concept in California where NO_x and Sox have been traded for sometime.

Hazardous Waste Management

1. Hazardous waste management is cradle to grave.
2. It is beyond the grave since you are liable for wastes that you have deposited at a waste site.
3. For a waste to be classified as hazardous waste, it must first be a RCRA solid waste.
4. Always track your generation of hazardous wastes on a monthly basis (especially if you are a small quantity generator).
5. There is a one-year time limit for storing hazardous wastes at your satellite accumulation point in California
6. Contingency Plan is a living document. It must be kept up-to-date.
7. Tell your employees what to do in case of emergency.
8. Some states have classified hazardous wastes that are in addition to the universe of federal hazardous wastes.
9. Check state agency for secondary containment requirements for waste storage.
10. Many states have more than just four types of universal wastes.
11. Improperly prepared labels are the low hanging fruits for inspectors.

12. Watch out for discarded aerosol spray cans that are still pressurized. They are hazardous wastes unless classified as state universal wastes.

The following are common RCRA violations listed by EPA:

- Failure to properly sample and/or test hazardous waste or apply knowledge of waste as required to comply with Subpart C waste determinations.
- There are open hazardous waste containers not currently in use.
- There are no hazardous waste labels or containers are mislabeled.
- Inadequate aisle space exists.
- Hazardous waste signs and emergency numbers are not posted at hazardous waste storage areas.
- Drums in the storage areas have been there longer than 90 days.
- Satellite accumulation areas have more than one 55-gallon drum.
- Incompatible waste materials/wastes are stored next to each other. Drums lack secondary containment per state requirements.
- There is a lack or incomplete inspection of the weekly logs at the hazardous waste storage areas per state requirements.
- Large quantity generators either lack a training plan, have no annual RCRA training, or have poor training records.
- The hazardous waste contingency plan is incomplete and/or has not been sent to the local emergency entities.
- Land ban notifications do not accurately reflect the waste.
- Contractors ordinarily handle waste determinations and manifests. The facility staff members signing the manifests are legally responsible for both waste determinations and accurate reporting on the manifests.

Here are some key requirements under RCRA:

Requirement	CESQG	SQG	LQG
Determine Whether Solid Waste is Hazardous	Yes §262.11	Yes §262.11	Yes §262.11
Generation Quantity Limits	≤100 kg/mo	100 kg/mo to 1,000 kg/mo	>1,000 kg/mo
Acute Waste Limits	≤1 kg/mo	≤1 kg/mo	None

EPA ID Number	Not required §261.5(b)	Required §262.12	Required §262.12
RCRA Personnel Training	Not required §261.5(b)	Basic training required §262.34(d)(5)(iii)	Required. §265.16
Exception Report	Not required §261.5(b)	Required within 60 days of hazardous waste being accepted by initial transporter §262.42(b)	Required within 45 days of hazardous waste being accepted by initial transporter. §262.42(a)(2)
Biennial Report	Not required §261.5(b)	Not required §262.44(a)	Required §262.41
Maximum On-site Accumulation Limits (without permit)	1,000 kg §261.5(g)(2)	6,000 kg. §262.34(d)(1)	Any quantity
Accumulation Time Limits (without a RCRA permit)	None §261.5(b)	180 days (or 270 days if transported more than 200 mi.) EPA may grant 30 days for unforeseen, temporary, and uncontrollable circumstances. §262.34(f)	90 days. EPA may grant 30 days for unforeseen, temporary, and uncontrollable circumstances. §262.34(b)
Labeling of accumulated containers or tanks	No §261.5(b)	Accumulation start date clearly marked and visible §262.34(a)(2); "Hazardous Waste" label on each container or tank. §262.34(a)(3)	Accumulation start date clearly marked and visible §262.34(a)(2); "Hazardous Waste" label on each container or tank. §262.34(a)(3)

Use Manifests	No §261.5(b)	Yes, unless the waste is reclaimed under contractual agreement in accordance with the requirements of §262.20 (e).	Yes, unless the waste is reclaimed under contractual agreement in accordance with the requirements of §262.20 (e)
Contingency Plan	No §261.5(b)	Basic. §262.34(d)(5)	Required. §265 Subpart D
Preparedness & Prevention	No §261.5(b)	§265 Subpart C	§265 Subpart C
Land Disposal Restrictions	No §261.5(b)	§268.7(a)(4)	§268.7(a)(4)
Tanks Management	No §261.5(b)	§265.201	§265 Subpart J except §265.197(c) and §265.200
Container Management	No §261.5(b)	§265 Subpart I except §265.176 and §265.178	§265 Subpart I
Storage Requirements for Accumulated Hazardous Waste	None §261.5(b)	Basic requirements with technical standards for containers or tanks	Full compliance with management of containers or tanks.
Reporting under RCRA in case of fire, explosion or release	None §261.5(b)	Immediately notify NRC §262.34(d)(95) (iv)(C)	Immediately notify local authorities and NRC §265.56(d)(1) and (2)

Superfund

1. Superfund carries strict, joint and several, and retroactive liabilities.
2. Superfund is a step beyond the grave. You are responsible for your wastes even after you have disposed of them.
3. Always do due diligence **before** you choose a waste disposal site to minimize your liability.
4. Always choose a disposal site that accepts wastes from other large viable companies. It is better to share joint and several liability with large companies than with small dry cleaners.
5. At a minimum perform Phase 1 environmental assessment on a property that you plan to lease. You want to set the baseline

environmental conditions under which you will return the property to the landlord at the end of your lease.

6. Don't count on others to protect you because they won't.

Response to Chemical Spills

1. If you exceed the federal Reportable Quantity (RQ), you must report your release to the National Response Center at **1-800-424-8802**.
2. Use the List of Lists to determine your Federal RQ.
3. The RQ always refers to the pure chemical form in pounds. For example, if the RQ for a chemical is 1000 pounds and it makes up 50% of a compound, you will have to spill 2000 pounds of the compound to exceed the RQ.
4. In California, you must report all spills to Cal EMA at 1-800-852-7550 regardless of quantity **unless you** can proof there is no harm to property, human health or environment.
5. Check with local and state agencies for any additional reporting requirements.

Inspection

1. Also be prepared for your next inspection. Do mock inspections often.
2. Do not document your mock inspections. You do not want to create a paper trail.
3. Don't win the skirmish and loose the war by fighting with the inspector.
4. **NEVER** lie to an inspector. It is a crime.
5. Never reprimand your employees in front of an inspector.
6. Know your own permits. Find out what your permit requires you to do **BEFORE** the inspector shows up
7. Always stay with the inspector during plant tour.
8. If at all possible, try to correct problems **BEFORE** the inspector leaves your premise.
9. Review any citation carefully because inspectors have known to make mistakes.
10. All penalties are negotiable. They are more negotiable if you have a good performance records and you have maintain good working relationship with the agency.

Environmental Management Systems and Audits

1. Review EPA's Environmental Audit Policy of 1986.
2. There are lots of audit protocols out there for you to use.
3. You do audit to uncover small environmental problems before they fester into big, unmanageable and costly ones.
4. Never do internal audits unless you have the financial resources and management's commitment to fix the problems you uncover.
5. Compliance audit only tells you your compliance status on the day you do the audit. It is like your annual physical checkup.
6. Management audit is an evaluation of your environmental health. It is like your doctor discussing your life style with you. It can "predict" future performance.
7. A good audit program should include both compliance and management audits.
8. Always ask open-ended questions during an audit. They give you much higher quality information.
9. Do root cause analysis whenever you can. It can help you identify underlying problems during an audit.
10. EMS requires top down support and bottom up involvement.

Appendix 2: Understanding the Clean Water Act

Congress passed the Clean Water Act in 1972.

The Clean Water Act of 1972 (also known as Public Law 92-500) was a major effort by the US Congress to revamp the water pollution control law in the country. This Act turns out to be one of the most successful environmental laws on the books.

A major component of the Act was a \$5 billion federal construction grant to municipalities to upgrade their wastewater treatment plants from primary to secondary treatment. This mandatory requirement was the major reason the waterways of the United States cleaned up significantly after passage of the law.

The \$5 billion construction grant was also one of the reasons cited by President Nixon when he vetoed the bill. He felt it was inflationary. His Presidential veto was overridden by Congress and the Act became law of the land in 1972.



Congress made a number of revisions to the Act since then. In 1990, Congress passed the Oil Pollution Act to require new oil tankers to be double-hulled and have additional insurance.

This was in response to the Exxon Valdez oil spill in Alaska.

NPDES Permit

The Act requires a discharger to obtain an NPDES permit. NPDES stands for National Pollutant Discharge Elimination System. When Congress passed the law in 1972, it had vision of industrial discharges being totally eliminated. That was the congressional intent.

The NPDES permit is the backbone of the Clean Water Act. Each permit must have a set of effluent limitations that are based on both water quality standards and technology based effluent limits. Every discharge of

pollutants to the navigable waters of the United States must have a permit from either the Environmental Protection Agency (EPA) or a state agency if EPA has delegated permit issuing authority to that state.

Navigable waters are broadly defined to include rivers, streams, wetlands, lakes, etc.

Discharges to a municipality will require a pre-treatment permit issued by the municipality which in turn will have its own NPDES permit from the state or EPA.

A state that has been delegated the permitting authority will issue the NPDES permit directly to the discharger with oversight by EPA. After negotiation with the permit applicant, the authorized state submits its draft permit to EPA for review and comment. EPA can approve it, request changes to the draft permit or reject it.

Note that any Federal environmental program that has been delegated to a state is always subject to EPA oversight and final approval/disapproval.

According to The Environmental Council of the States, all the states except Idaho, Massachusetts, New Hampshire and New Mexico have been granted the authority to issue NPDES permits by EPA as of November 2010.

In California, the State Water Resources Control Board has jurisdiction and is responsible for implementing the Clean Water Act.

The Board was created by the State legislature in 1967. It has 5 members appointed by the Governor and 9 Regional Water Quality Control Boards (RWQCB) each with 9 appointed members.

The following are the nine regional boards in California:

- North Coast RWQCB (Region 1)
- San Francisco Bay RWQCB (Region 2)
- Central Coast RWQCB (Region 3)
- Los Angeles RWQCB (Region 4)
- Central Valley RWQCB (Region 5)
- Lahontan RWQCB (Region 6)

- Colorado River Basin RWQCB (Region 7)
- Santa Ana RWQCB (Region 8)
- San Diego RWQCB (Region 9)

The Regional Boards are responsible for implementing the California Water Code (Porter-Cologne Water Quality Control Act) and the federal Clean Water Act in California. They also administer the California Underground Storage Tank Cleanup Fund and regulate the siting of TSD and other treatment facilities.

Water Quality Standards and Effluent Limits

There are two types of effluent limits in a NPDES permit that restrict the amount of pollutants allowed to be discharged to receiving waters:

1. Water Quality based limits: These are based on site-specific water quality criteria. For example, if the receiving water to which the waste is being discharged has substantial existing beneficial uses such as recreational activities, the effluent limits will be very restrictive in order to protect those beneficial uses. So these water quality based limits are directly dependent on the water quality of the receiving water.
2. Technology based limits. These limits are set by EPA on the basis that each industry must provide a minimum level of treatment to its waste water. The technical effluent limitations are set for each industrial category. For example, an oil refinery industry is required to have oil/water separator as a minimum level of treatment and the NPDES permit will reflect that. Technology based limits developed for specific major industries are published in 40 CFR 401.

The site-specific water quality standards or criteria can be numerical or narrative. For example, a cadmium level of 5 ug/l would be a numerical criterion. "There shall not be any visible sheen of oil on the water surface" would be an example of a narrative criterion.

These water quality standards are designed to protect existing beneficial uses and to ensure non-degradation of existing water quality. For example, one would expect the water quality standards for a recreational beach to be much more stringent than those for a shipping channel. One has much greater beneficial uses than the other.

The Clean Water Act requires each state to review and/or revise the Water Quality Standards publicly every 3 years. These standards would then form the basis for water-quality based NPDES effluent limits and they would determine the level of treatment needed and subsequent compliance. In general, each tri-annual review often results in more restrictive standards.

It is extremely rare that a state agency will relax its existing Water Quality Standards during its review cycles. The fear of push back from environmental groups and private citizens is a major deterrent.

Water quality standards can be challenged through a use attainability study which must be approved by both the state and EPA. If a company wishes to challenge an existing water quality standard, it must perform a use attainability study to demonstrate to the state agency that the standard can be relaxed without affecting existing beneficial uses and that anti-degradation is preserved.

It is very rare that a state agency would approve such a study and equally rare that the federal government will approve it if the state agency were to approve it.

NPDES Permitting Process

The NPDES permitting process may include public hearings.

In a state where EPA has delegated the permitting authority, the state agency negotiates with the permit applicant on what should be included in the permit. This is where you and your consultant sit down with the agency's permit writer and agree to a set of limits that both you and the agency can live with. In the negotiation process, you will be pushing for the least onerous limits on your effluent while the state permit writer will make sure that whatever comes out in the permit will get EPA's approval. Remember that even though the authority has been delegated to the state, EPA always retains the right of veto. So you are in effect negotiating with two agencies.

Once you and the state have reached an agreement, the agency will then issue a draft permit and publishes its intent to issue the permit in local newspapers and allows for a public comment period of 30 to 60 days. If

there is sufficient public interest about your draft permit, the agency will very likely hold public hearings.

At the public hearings, anyone can make presentation to the hearing officer and comment on the merit or demerit of your draft permit. If your company is not very popular with your neighbors, they will come out and say nasty things about you. None of their comments are required to be made under oath and they are not cross examined by anyone.

As a matter of protection, you as the applicant should appear before the hearing and comment on every aspect of the draft permit. The purpose here is to preserve your legal standing later if you wish to or need to challenge the final permit in federal court. Remember that at this point, you and the agency that issues the draft permit are on the same side - having negotiated the draft permit. It is in your best interest to help defend the draft permit at the public hearings.

After the public hearings, the hearing office will review all the comments



and issue an administrative record which will contain his rulings on the public comments. This is another reason why you should always comment on the draft permit. Very often, the hearing office will use the statements made by an applicant to refute false accusations or misunderstanding presented by the general public at the hearing.

The agency then issues the final permit after taking into consideration all the comments raised in the hearing. If you are not satisfied with the final permit, you have the right to challenge the permit administratively at evidentiary hearings or in the federal courts.

Things to keep in mind about your NPDES Permit

1. Your NPDES Permit requires you to file a Discharge Monitoring Report (DMR) with the agency on a regular basis - either monthly or quarterly – depending on the size of your discharge. The DMR is a public document and is based on self-reporting and must be

submitted under the penalty of perjury. An official at your company must certify under oath to its accuracy and authenticity. Falsification of the DMR is a felony under the Clean Water Act. Many plant managers have gone to jail for falsifying their DMRs.

2. NPDES permits are granted for a five-year term. The permit holder must apply for renewal 18 months before the permit expires. Note that the new permit conditions will be negotiated based on past results. For example, if the permit holder has been discharging only 30% of its permit limit, there is a great likelihood that the effluent limit in the new permit will reflect that and be close to 30% of the old limit. It is generally not a good idea to go too low in your effluent because you will be penalized for that extra effort. Stay within 10% of your effluent limits to give yourself a safety margin.
3. An NPDES permit may contain a mixing zone as opposed to “end of the pipe” limits. More on mixing zone later.
4. Many permits contain special conditions requiring the holder to perform certain tasks. For example, some permits may require you to conduct an independent wastewater audit in order to minimize waste generation.
5. Some permits contain interim limits thereby giving the permit holder a length of time to upgrade its treatment plant before final effluent limits set in. These should have been agreed upon during the permit negotiation process.
6. All permits are subject to the Clean Water Act’s Anti-backsliding provision which states that new permit limits cannot be less stringent than existing ones. There are a few exceptions:
 - If you have made major modifications to the facility
 - If new information has come to light since the issuance of the permit
 - There are events beyond your control

EPA rarely allows exceptions to the anti-backsliding provision. There are no case laws related to this section of the Act.

7. Every permit contains a boiler plate clause that states that by accepting the permit, you are giving your consent to be inspected by the agency during normal operating hours.
8. Your permit will have monthly average limits and daily maximum limits, Pay special attention to the monthly average limits because some judges have considered a violation of a monthly average to be the same as violating your permit every day of the month in terms of penalty calculation. You are allowed to collect more samples than what is required in your permit. For example, you can use the additional sampling results to average down your monthly average concentrations. Let's say if you have a few bad samples at the beginning of the month due to a plant upset, you can take more samples during the remaining weeks after the upset has been corrected to average down the results. However you must include all these additional sampling results in your monthly calculations.

If you take samples and analyze them for parameters that are not required to be tested in your permit, you are not required to submit those results. Many people use a surrogate parameter that is not listed in the permit to monitor the operation of your plant. Those results are not required to be submitted to the agency.

9. You must not take samples on days when you are not in production. That is falsification of results. If you have no production on the weekends, do not take samples on the weekends because they would not be representative of your operating conditions.
10. It is also your responsibility to ensure that all your chemical analyses – whether performed in-house or by an independent laboratory – are accurate. If a lab reports a violation of your permit limit, always ask your lab to re-do the test and provide the margin of error.
11. Your permit will have limitations on total maximum flows and effluent limits. You need to calibrate your flow meter to ensure its accuracy. The inspector will often ask to see your Operations and Maintenance logs.

12. All your DMRs are public documents. Anyone can obtain copies of your DMRs for the purpose of filing citizen lawsuit against you.
13. If you have been granted a mixing zone in your new permit, you will be required to validate your mixing zone once your plant is operating under the new permit.
14. The agency may require you to perform a bioassay (whole effluent toxicity) to demonstrate that your effluent is not toxic to aquatic organisms.
15. Some permits have limitations on production and operating hours. Avoid such limitations on production when you negotiate your permit with the agency. Some permits only have restrictions on the pollution loads discharged. These are much better because they give you flexibility on your production.
16. You are required by law to notify the agency in writing when you have to bypass your treatment plant due to mechanical malfunction. In your written notification, you also need to tell the agency what caused the malfunction and the steps you have taken to prevent breakdowns from happening in the future.
17. You are required to maintain your equipment in a satisfactory condition and calibrate your equipment periodically. Your maintenance record is one of the documents frequently requested and inspected by an agency inspector.

Mixing Zone

According to 40 CFR 131.13: "States may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances. Such policies are subject to EPA review and approval."

Mixing zone or dilution zone means a limited area or volume of water where initial dilution of a discharge takes place and where numeric water quality criteria can be exceeded but acutely toxic conditions are prevented from occurring.

These are areas where a discharge undergoes initial dilution and may extend to cover secondary mixing in the ambient water body. However, they must not impair the integrity of the water body as a whole and there must not be lethality to organisms passing through a mixing zone. There must not be any significant health risks, considering likely pathways of exposure within a mixing zone.

Mixing zones are designed for critical flow periods within water body. Computer modeling and field measurements are used to define the size of the mixing zone. Dye studies and field samplings are then used later to validate the computer results.

Note that mixing zones are established by individual state agencies on a site-specific basis. Each State determines its own rules for mixing zones and these rules are subject to EPA's approval. Check with your state agency.

A mixing zone can save you substantial amount of money in terms of equipment and chemical costs because you would not need to meet the water quality standards at the end of the discharge pipe. You only need to meet the standards (if a mixing zone has been granted) at the edge of the mixing zone. The dilution ratio inside a mixing zone can be as high as 100:1. For example, if you re trying to get a mixing for cadmium and the water quality standard for cadmium is 2 mg/l. With a mixing zone, you will be able to discharge 200 mg/l of cadmium at the end of the pipe instead. You are in effect using the receiving water inside the mixing zone to dilute your cadmium from 200 mg/l to 2 mg/l at the edge of the mixing zone.

This is the one case where “dilution is a solution to pollution”. Since you are using the receiving water to dilute your effluent to a level specified by the water quality standard, the effectiveness and size of the mixing zone is entirely dependent on the levels of pollutants already in the water. The cleaner the receiving water body, the less water you will need for the dilution and you will need a smaller mixing zone. Conversely, if the receiving water does not meet the water quality standards, you will not be able to use it to dilute your waste and a mixing zone will not be possible since you will need infinite amount of water for dilution.

Mixing zones only works in relatively clean bodies of water.

Waste Load Allocations

If a body of water is under stress (not meeting certain water quality standards), the Clean Water Act requires states to establish Waste Load Allocations (WLAs) to limit the amount of pollutants being discharged from existing and future point sources in order to prevent further degradation of that body of water.

For example, if the dissolved oxygen level in a lake is below that specified in the water quality standard, the state agency will have to limit the amount of nutrients (phosphorus and nitrogen) that goes into that lake by allocating how much each point source can discharge. The agency will define a Total Maximum Daily Load (TMDL) as part of its Waste Load Allocation scheme and these restrictions will have to be submitted to EPA for approval. These TMDLs established under CWA Section 303(d) are the sum of individual WLAs for point sources plus load allocations for non-point sources plus natural background sources and a margin of safety.

There are numerous waste load allocation schemes approved on EPA's website. The most common schemes are equal percent removal, equal effluent concentrations, and a hybrid method. WLAs that are set for conventional pollutants are different from toxic pollutants which require mixing analysis.

WLA Guidance documents can be downloaded from EPA Office of Water Regulations and Standards, Assessment and Water Protection Division.

California State Water Resources Control Board and the nine regional boards are responsible for designating TMDL under Section 303(d) of the Clean Water Act. Many of these areas have restrictions on multiple pollutants.

Pretreatment Program

The Pretreatment Program under the Clean Water Act is designed to protect POTW (40 CFR 403). Discharges to POTW (publicly owned treatment works) are governed by the following two standards:

1. "Protection" standards
2. "Categorical" pretreatment standards for specific industries and toxic pollutants.

Protection Standards

These standards protect POTW from pollutants that:

1. May cause interference with sewage treatment plant operations. Example are heavy metals that are not easily removed by biological treatment plants. Whatever metals removed will be concentrated in the sludge which would impair its use as fertilizer.
2. Cannot be readily removed at the treatment plant. Examples are excessive amounts of oil and grease.
3. Could cause health or safety concerns or potential endangerment to the public or to the environment. Examples are hazardous wastes and corrosive wastes.

Protection Standards require that there shall be:

1. No fire or explosion hazard (wastes with flash point < 140 F)
2. No hazardous wastes
3. No corrosive wastes (wastes with pH < 5.0)
4. No high solids or viscous pollutants
5. No thermal discharge (wastes >104 F)
6. No oily wastes
7. No toxic gas generation

Categorical pretreatment standards

Categorical pretreatment standards are set up to govern "unconventional" constituents such as heavy metals.

If the POTW cannot treat these pollutants, the discharger must achieve comparable level of treatment prior to discharge. A good example is the pretreatment of plating wastes. Since most POTWs are biological in nature and are not designed to remove heavy metals, the heavy metals must then be removed in a pretreatment system prior to discharge to the POTW.

If you operate a plating mill, you will be subject to the categorical pretreatment standards under the Clean Water Act.

Here are some typical pretreatment limits (in ppm) set by local municipalities:

Arsenic Total	1.5
Cadmium Total	0.3
Chromium Total	2.0
Copper Total	3.1
Cyanide Total	2.6
Lead Total	1.7
Mercury Total	0.05
Nickel Total	1.7
Oil and Grease Hydrocarbon	100
Oil and Grease Total	300
Phenols Total	2.5
Silver Total	0.8
Zinc Total	5.7

Citizen Lawsuits

Citizen lawsuits are very common under the Clean Water Act. Congress gives private citizens the power to file lawsuit against a polluter if the agencies are not taking meaningful enforcement action against it.

[Citizen suits](#) require a 60-day waiting period before they have legal standing in courts. You cannot be sued for past violations (based on a US Supreme Court ruling). However, you are liable for your on-going or intermittent violations. So if you have on-going violations of 10 monthly averages for 3 months, your maximum potential penalty exposure could be as high as \$29.25 million ($\$32,500 \times 10 \times 30 \times 3$). That is the amount of penalty the party suing you could ask for in federal court under the Clean Water Act.

There are basically three possible options available to you when you have been served with a lawsuit. The first option is to negotiate a settlement with the group that is suing you. The second option is to ask the agency to

pursue legal action against you in order to preempt the citizen lawsuit. The third option is to fight it in court.

If you decide to negotiate a settlement with the group that is suing you, the best approach is to sit down with them and find out the real reasons behind the lawsuit and what they want from you. The negotiation process will go a lot smoother if the principals are directly involved rather than through attorneys. Before you start the negotiation process, you should make sure that both parties agree to negotiate under the protection of Federal Rule of Evidence 408. This Rule basically states that discussions between the parties during negotiations are not admissible in court later.

The successful outcome of this option would be an out-of-court settlement which generally goes like this: You are going to have to agree to pay the agency a cash penalty for your past transgressions. You will end up paying the attorneys who represent the citizens who want to sue you. You will also have to agree to invest in operational and/or capital improvements in your treatment plant in order to prevent future violations.

All of these obligations will be imbedded in a legally binding document known as a Consent Agreement which will have to be approved by the agencies involved and the federal court. The Agreement will most likely include language that requires you to make frequent reports to the citizen group and meet certain specific deadlines in terms of improved performance. Failure to meet any of these reporting and performance deadlines would automatically trigger stipulated penalties. These are penalties written in the Agreement that you have agreed (stipulated) to pay if you miss a deadline.

The second option is to get the agency to take enforcement action against you in order to preempt the citizen lawsuit. Under the Clean Water Act, any person contemplating suing you must send you and the agency a letter (known as Notice of Intent to Sue) and wait 60 days before that person has legal standing before the court. The Act also states that if the agency has commenced and is diligently prosecuting a civil or criminal action against you during the 60-day waiting period, the lawsuit can be preempted. The United States Supreme Court has noted that citizen suits are “proper only if the Federal, State, and local agencies fail to exercise their enforcement responsibility”. The trick here is to get the agency to take action against you within the 60-day notification time period or else the group will have legal

standing before the court. Sixty days is not a very long time to get a bureaucracy to formulate the charges and take you to court.

The advantage of this option is that the citizen lawsuit will be preempted if you are successful in getting the agency to act during the 60-day waiting period and you would not have to pay the group's attorney fees – which could be quite substantial.

For example, in the case of *Lockett v EPA*, the 5th Circuit US Court of Appeal dismissed the citizen law suit because the state agency (Louisiana DEQ) issued a compliance order against the defendant (Village of Folsom) with a \$466,450 penalty.

Another benefit is that you would not have to deal with an outside group. However, you would still have to negotiate a substantial penalty and reach some sort of settlement with the agency.

The third option is let the case go to trial. This is not a very wise choice because you have already admitted to the violations in your DMRs – under penalty of perjury. Your defense in court is very limited.

The bottom line is this: The best way to avoid all these legal headaches is to take proactive steps right away once you have violations. Find out what is causing the violations and fix them in a timely manner. Document your efforts in resolving the issue.

Do not take the attitude that everything is fine because the agencies have not taken enforcement actions against you even though you have all these violations. With the advent of the internet, it is becoming very easy for outside groups to monitor what you are doing. Keep in mind that environmental groups may be watching you especially if your company has deep pockets. And always remember that all those DMRs you file with the agency are public documents.

In sum, the worst part of a citizen law suit is that you don't really have much of a defense in court since you have already admitted (under penalty of perjury) to all your violations in your DMRs. You should try to negotiate an out of court settlement with the party that is suing you.

Alternatively, if you can get the state agency to take enforcement action against you during the 60-day waiting period, the party suing you will have no standing. Their law suit against will most likely be preempted because the enforcement action taken against you by the agency will have “preempted” the reason for filing a citizen law suit.

Violations that Could Lead to Criminal Prosecution

Here are some common examples of Clean Water Act violations that could lead to criminal prosecution if you do not handle them properly.

1. Negligent violations. For example, if you fail to repair your storage tanks when you have knowledge that they are structurally unsound, you could be held for negligent violation when a tank collapses and causes massive environmental damage or death.
2. Knowing violations. You “should have known” about regulations that impact you in your industry. Ignorance is no excuse. It is your job to understand what environmental laws govern your operation and adhere to them.
3. Knowing endangerment to health and environment. You perform an act with full knowledge that it will endanger the environment or human health. An example would be operating a wastewater treatment plant without first obtaining a NPDES permit.
4. Falsification of DMRs. You make false entries in your DMRs. It is a felony under the Clean Water Act.

There are three levels of penalties under the Clean Water Act:

1. Administrative: the agency issues an Administrative Order asking the violator to bring its plant back into compliance by a date certain. The Order may include cash penalties.
2. Civil/judicial: The agency takes the case to court and asks the judge to impose sanction and/or penalties against the violator.
3. Criminal: The agency files criminal charges against the violator (company and personnel). If convicted, the company pays criminal

finances and someone within the company may end up in jail. The FBI is often involved since the Clean Water Act is a federal law. Many criminal cases could have been avoided if someone had taken the time to correct a minor violation that eventually festers into a criminal act. People compound their problem when they try to cover up their illegal activities. Lying to federal investigators is a criminal offense.

Five notable cases of criminal prosecution under the Clean Water Act:

- BFI Services Group. Several employees illegally dumped hazardous wastes into a sewer line that led to a POTW. The company paid a \$3 million criminal fine and the employees went to jail.
- Eklof Marine. This company spilled 826,000 gallons of gasoline and paid \$8.5 million in criminal fines.
- Warner Lambert. Several plant managers in Puerto Rico falsified DMRs and were sentenced to jail. The company paid a \$3 million criminal fine.
- US v. Weitzenhoff and Mariani. Illegal discharge of municipal sewage and sludge from Hawaii Kai WWTP. Sludge was bypassed at night. The defendants were sentenced to 21 and 33 months in jail. Conviction was affirmed by 9th Circuit.
- US v. Donald Budd. Donald Budd of Texas was sentenced to 6 years in prison, \$15,000 fine and 140 hours community service for conspiracy to commit mail fraud, mail fraud, falsifying wastewater and drinking water test reports. Daniel Brown - VP and co-owner was sentenced to 2 years in prison, \$10,000 fine and 140 hours of community service for making false statement. EPA's Criminal Investigation Div., the FBI and the then-Texas Natural Resource Conservation Commission.

EPA's civil penalty policy

There are three components to EPA's civil penalty policy:

1. Gravity portion: based on the severity of the violation.

2. Economic benefits: The agency wants the violator to pay back any money it has saved by being out of compliance. The purpose here is to level the playing field.
3. Supplemental Environmental Projects (also known as Environmentally Beneficial Projects). The violator may be able to offset part of the cash penalty by performing a project that can benefit the environment.

An Enforcement Case in California

EPA Region 9 and Los Angeles RWQCB filed suit against city on Jan 8, 2001 for over 2000 sewage spills in 5 years. The governments sought:

1. Reduction in oil & grease
2. Larger capacity sewer lines
3. Improve maintenance and better control of odor

Civil penalty of \$1.6 million was assessed against the city with \$800,000 to the US Treasury and \$800,000 to the Regional Board for environmental improvement projects.

As part of the settlement, the City also agreed to do the following:

1. Rebuild at least 488 miles of sewer lines;
2. Clean 2,800 miles of sewers annually;
3. Enhance its program to control restaurant grease discharges;
4. Increase the sewage system's capacity, and
5. Plan for future expansion.

Things to watch out for under the Clean Water Act

There are certain things you need to watch out for under the Clean Water Act:

1. Thumb on the scale. If you take samples from a non-representative location, you are putting your thumb on the scale and it is a criminal thumb. For example, if you take your test samples on days when you

are not in production, you are intentionally skewing (falsifying) your test results and the agencies take a dim view of that.

2. Lowest level employees. Do not get mad at your lowest level employees when they bring you bad news about your non-compliance. You do not want to give them a reason to falsify records for fear of being fired by you. Remember that if there is a violation, the agencies will be more interested in you or your plant manager than the lowest level employee.
3. Dilution is NOT a solution to pollution. Never dilute your effluent in order to meet your permit limits. That is a felony under the Clean Water Act.
4. Timely notification. When you have a mechanical failure at your plant that causes a bypass and results in untreated wastewater to be discharged, you must notify the agencies in writing in a timely manner.
5. Maintain good working relationship with agencies. Always try to maintain a good working relationship with your agencies. If you are able to do that, you are more than half way there. Conversely, if you or your plant manager has an adversarial relationship with your regulatory agencies, you have a disaster waiting to happen.
6. Demonstrate good faith efforts. Always document and demonstrate your good faith efforts if you have performed above and beyond the requirements of your permit conditions. All of these good faith efforts will come in handy if you need to negotiate a penalty.

Spill Prevention, Control & Countermeasure (SPCC) Program

The Clean Water Act requires owners or operators of all onshore or offshore facilities to prepare an SPCC Plan if they have more than 1,320 gallons aggregate above ground storage capacity or more than 42,000 gallons below ground of any kind of oil vegetable/mineral/petroleum and these oils have the potential to impact navigable waters.

The first thing you want to do is to make sure that you only include the oil for which you have responsibility as owner or operator. This means that you

probably do not need to include the oil in any transformer station in your calculation towards the 1320 gallons threshold even if you have them on your property. In most instances, you are neither the owner nor operator of the station because only the utilities have access to the transformer stations. Many facilities make the mistake of including the large amount of transformer oil in their threshold calculation and end up preparing a SPCC plan when they don't really need to.

EPA made several major changes to the SPCC regulations in July 2002. One of the most significant changes is that containers less than 55 gallons in capacity no longer need to be counted towards the 1320 gallons aggregate threshold. To take advantage of this change, you should consider storing your oil in smaller containers (less than 55 gallons capacity).

Note that the 1320-gallon threshold capacity refers to the shell capacity of a container and NOT the amount of oil stored in the container. So if you have a 10,000 gallons oil tank with 50 gallons of oil in it, you will have to count that as 10,000 gallons under SPCC.

According to the SPCC regulations, your SPCC Plan "shall be a carefully thought-out plan, prepared in accordance with good engineering practices" and has "the full approval of management at a level with authority to commit the necessary resources".

When you prepare your plan, make sure your plant personnel have ownership. In other words, make sure the people who are going to be implementing the plan have some level of involvement in its development. If you use outside consultants to prepare your plan, include your staff as participants at the meetings with the consultants. Without plant ownership, your SPCC plan will not get implemented as written.

On the issue of ownership, ask yourself this question: Do you wash your rental car before you return it to the rental car company? The likely answer is "no". Why? Because it is not your car! You have no ownership in it. The same goes with your SPCC plans.

Note that the regulations specifically require senior management's commitment in funding the plan. In addition to having a Professional Engineer who is knowledgeable about your site sign off on the plan, you

also need to get your senior management (plant manager – for example) to certify that it is prepared to commit the necessary resources to implement the plan.

The SPCC program is a set of **performance-based** regulations. What that means is that you must implement the program as stated in your plan. Having a SPCC plan written is just the beginning – not the end.

Remember that your SPCC must be implemented as planned and as documented. EPA inspectors will look for evidence of implementation. For example, if you state in your plan that you are going to do weekly



inspection of your oil tanks and containers, the inspector will want to see a weekly inspection checklist or log. So make sure the plan is realistic and implementable. Do not be overly ambitious and over-promise. Keep the plan simple and practical. If it is too complicated, no one will carry it out and it will fail agency inspection.

Another key point to keep in mind is that the plan is a live document. You need to update it whenever there are changes in personnel or plant details. It would be very embarrassing - to say the least – when the inspector asks to meet with your SPCC team members and finds out that some of them are no longer with your company.

Here is a summary of changes made to the regulations since July 2002:

1. Single container above ground > 660 gallons was deleted on 17 July 2002
2. 1,320 gallons aggregate above ground excluding containers < 55 gallons
3. 42,000 gallons below ground except for RCRA UST
4. Plan must be reviewed every 5 years.
5. Must conduct “discharge prevention briefings” at least once a year.
6. Requires fracture evaluation for above ground containers that have been repaired, altered or reconstructed

You now only have to train “oil-handling” employees on:

1. O & M of equipment to prevent oil discharge
2. Discharge procedure protocols
3. Applicable laws and regulations
4. Contents of the SPCC plan

New SPCC Regulations in 2007

There is no need to have professional engineers to certify your plan if you have less than 10,000 gallons of oil aboveground. The plant manager can “self-certify” it. To qualify for self certification, you must meet certain spill history requirements. No single spill of greater than 1000 gallons or 2 incidents of 42 gallons each in the past three years. The rule became effective on Feb 26, 2007. These plants are often termed Tier I and Tier II Qualified Facilities depending on whether there is a tank with over 5000 gallons capacity.

Qualified Facility Applicability

If the facility total aboveground oil storage capacity is 10,000 gallons or less...		
And...	And the facility has...	Then the facility is a:
In the three years before the SPCC Plan is certified, the facility has had no discharges to navigable waters or adjoining shorelines as described below: <ul style="list-style-type: none"> • A single discharge of oil greater than 1,000 gallons, or • Two discharges of oil each greater than 42 gallons within any 12-month period. 	No individual aboveground oil containers greater than 5,000 gallons;	Tier I Qualified Facility: Complete and self-certify Plan template (Appendix G to 40 CFR part 112) in lieu of a full PE-certified Plan or other self-certified SPCC Plan.
	Any individual aboveground oil container greater than 5,000 gallons;	Tier II Qualified Facility: Prepare a self-certified Plan in accordance with all applicable requirements of §112.7 and subparts B or C of the rule, in lieu of a PE-certified Plan.

Please note: This does not include discharges that are the result of natural disasters, acts of war, or terrorism. When determining the applicability of this SPCC reporting requirement, the gallon amount(s) specified (either 1,000 or 42) refers to the amount of oil that actually reaches navigable waters or adjoining shorelines not the total amount of oil spilled. EPA considers the entire volume of the discharge to be oil for the purposes of these reporting requirements.

Requirements of SPCC

SPCC requires certification, commitment and implementation. Specifically, it requires the following:

1. Secondary containment for storage area.
2. Certification by a Professional Engineer if you have more than 10,000 gallons of oil storage shell capacity above ground.
3. Written commitment by management to provide resources to implement the plan.
4. Evidence of implementation by team.

Here are some examples what you can incorporate into an SPCC Plan:

- Weekly visual inspections
- Inspection of tank support system
- Leak and deterioration inspection
- High level alarm on fuel tanks
- Inventory control
- Calibrated visual gauges outside tanks
- Ensure that tank truck has no leak
- Hose and pump are in good condition
- Control valve is opened during loading and closed afterwards
- Dike drain valve is closed and locked
- Supervisory personnel present at all times

Whatever you say you are going to do in your SPCC plan, you need to follow through and do it. EPA inspector will be looking for evidence of implementation.

Remember that SPCC Plan requires plant ownership, commitment by management, and implementation.

Here are 10 common violations of SPCC regs to look out for:

1. The SPCC Plan did not have a signature of approval by management.
2. The SPCC Plan was not certified by a PE, if applicable.
3. The SPCC Plan lacks written procedures for inspections and for maintaining inspection records for 3 years.
4. Personnel are not properly instructed in spill prevention procedures.
5. Compatibility of tanks with the material stored is not discussed.
6. One of the oil storage tanks has no secondary containment.
7. Facility security measures are not mentioned in the SPCC Plan.

8. Facility lighting is not addressed in the SPCC Plan.
9. Inadequate secondary containment exists for truck loading and unloading rack areas.
10. Effluent discharges are not addressed in the SPCC Plan.

SPCC Plan is performance-based. It's not what you say in the Plan that counts. It's what you actually do according to your Plan that counts.



Take a look at the SPCC Guidance for Regional Inspectors (EPA-550-B-13-002 December 16, 2013). This is a 921-page document prepared for EPA's regional inspectors when they go out to perform SPCC inspections.

Incidentally, the authority to implement and enforce SPCC rests solely with EPA. Congress has specifically prohibited EPA from delegating this authority to the state level.

What that means is that an inspector from a state agency has no authority to inspect your SPCC plan or to levy penalties against you for not having one. However,

some states have their own spill prevention plans that are fashioned after the SPCC and you will be required to maintain them for the state inspector. In California, the state law requires you to comply with SPCC. So in that regard, an inspector from the Regional Water Quality Control Board can fine you for not having a SPCC plan under state law.

Storm water Management

The storm water management program came about as a result of an out of court settlement (Consent Decree) between EPA and Natural Resources Defense Council.

EPA developed the following programs:

1. General permits

2. Limited monitoring and BMPs (Best Management Practices)
3. State run program (with a few exceptions).

This document is by far the best handbook on preparing a storm water pollution prevention plan.

The Concept of “no Exposure”

“No exposure” means no activities come into contact with storm water.

The term “no exposure” refers to all industrial materials and activities protected from rain, snow and runoff. “Industrial materials and activities” refers to equipment, raw material, machinery, products or wastes.

If you can demonstrate to the agency that none of your industrial activities comes into contact with storm water, you can petition the agency to exempt you from having to get a storm water permit.

To determine if you truly have “no exposure” with respect to storm water, try to answer the following eleven questions from the Regional Water Quality Control Board in California. If you answer “no” to ALL of these questions, your industrial activities are considered to have no impact on storm water and you will not be required to have a storm water permit. Note that each regional board in California may have slightly different requirements for “no exposure”. Always check with the regional board in your jurisdiction. Here are the eleven questions:

Are any of the following materials or activities exposed to precipitation, now or in the foreseeable future?

1. Using, storing or cleaning industrial machinery or equipment, and areas where residuals from using, storing or cleaning industrial machinery or equipment remain and are exposed to storm water
2. Materials or residuals on the ground or in storm water inlets from spills/leaks
3. Materials or products from past industrial activity
4. Material handling equipment (except adequately maintained vehicles)
5. Materials or products during loading/unloading or transporting activities

6. Materials or products stored outdoors (except final products intended for outside use [e.g., new cars] where exposure to storm water does not result in the discharge of pollutants)
7. Materials contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers
8. Materials or products handled/stored on roads or railways owned or maintained by the discharger
9. Waste material (except waste in covered, non-leaking containers [e.g., dumpsters])
10. Application or disposal of process wastewater (unless otherwise permitted)
11. Particulate matter or visible deposits of residuals from roof stacks and/or vents not otherwise regulated (i.e., under an air quality control permit) and evident in the storm water outflow

Very often, simply improving your housekeeping practice at the facility will help you meet some of the conditions. For example, if you move your raw material indoor, you can satisfy condition #6.

If you do not have room inside your building to store your raw material, you can erect a “storm-resistant shelter” and store your raw material in or under it.



The term “storm-resistant shelter” refers to completed roof and walled structures as well as structures with only a top cover with no side coverings as long as material stored underneath is not subject to any run-on and subsequent runoff of storm water.

There are three other terms in the storm water lexicon you need to be familiar with. The term “no exposure” means all industrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt and /runoff.

The term “industrial materials and activities” refers to, but is not limited to, material handling equipment or activities; industrial machinery; raw materials, intermediate products, by-products, and final products; or waste products.

The terms “material handling activities” mean storage, loading and unloading, transportation or conveyance, of any raw material, intermediate product, by product, final product or waste product.

The following general rules also apply to EPA’s “no exposure” exclusion:

- Sealed or completely closed containers or drums can be stored outdoor without cover as long as they are in good conditions and you do not transfer (add or withdraw) their contents outdoor.
- Adequately maintained vehicles parked outdoor will not jeopardize your “no exposure” status.
- Above ground storage tanks do not need to have roofs on them as long as they are physically separated from vehicle maintenance operations and their pipe and pumps do not leak. It is good management practice to provide adequate secondary containment for above ground storage tanks. Of course, if your facility falls under a Spill Prevention Control and Countermeasure Plan (SPCC), you will be required by federal law to have secondary containment.
- Temporary sheltering (such as the use of tarpaulins) is sometimes allowed until permanent enclosures can be provided. EPA recommends that such temporary covering be used only during facility renovation or construction.
- Industrial refuse and trash that are stored uncovered are considered to be exposed and will not qualify under the “no-exposure” rule.

One last point to remember: EPA’s “no-exposure” exclusion is NOT transferable. In other words, if a new owner takes over your facility, a new “no-exposure” application must be filed with EPA again.

Storm Water Permit in California – an example

Storm Water Permit application requires a site map and Notice of Intent. To apply for storm water permit in California, you will need a to-scale site map showing the following:

1. Buildings
2. Material handling and storage areas
3. Adjacent streets
4. Discharge locations
5. Arrow showing the north direction

You file your Notice of Intent with your application fee of \$830 with your site map. The Regional Board will then issue you a Waste Discharge ID (WDID). That is your permit. You will have to prepare a storm water pollution prevention plan and set up a monitoring protocol depending on the type of industry you are in.

The storm water permit is valid until Notice of Termination (NOT) is issued by the Regional Board or until you are able to obtain a “no exposure” exemption.

Storm water pollution prevention and monitoring program has the following elements:

- Identify storm water discharges
- Identify unauthorized non-storm water discharges
- Requires samplings
- Requires Best Management Practices in the form of a SWPPP
- Perform visual observations of storm water discharges and authorized storm water discharges
- Collect and analyze samples of storm water discharges
- No sampling at night or in bad weather
- Analysis must include
 - pH
 - total suspended solids (TSS)
 - total organic carbon (TOC)
 - specific conductance
 - toxic chemicals
 - other pollutants which are likely to be present
 - parameters listed in Table D of the General Permit.

There are two types of Best Management Practices: Procedural BMP and Structural BMP.

Examples of Procedural BMPs

1. Prompt and thorough clean-up of spills
2. Accurate recordings of spills and accidents
3. Regular visual inspection for spills and pipe leaks
4. Timely notification of supervisor
5. Apply pest control during dry weather
6. Good housekeeping
7. Inspect hoses or pipes before transferring products or fuel
8. Use drip pans whenever possible
9. Dry cleanup instead of hosing
10. Covering bags with tarps
11. Proper labeling of material
12. Clearing of clogged storm drains
13. Good dock fueling practices

Examples of Structural BMPs

1. Well-equipped spill response locker
2. Secured fencing and signage
3. Roofed chemical storage area
4. Secondary containment for tanks
5. Installation of collision posts
6. Segregation of waste streams
7. Sealing of joints and gutters
8. Provide adequate aisle space

Storm Water Pollution Prevention Plan Training Program

A good SWPPP training program should include the following:

Good Housekeeping

1. Review and demonstrate basic cleanup procedures
2. Identify proper disposal locations
3. Post signs in material handling areas
4. Be sure employees know where routine clean-up equipment is located

Spill Prevention and Response

1. Clearly identify potential spill areas and drainage routes
2. Share spill history with employees and learn from them
3. Post warning signs with phone contacts
4. Make sure employees know the “team”
5. Post locations of cleanup equipment

Materials Handling and Storage

1. Make sure employees know where chemicals are stored
2. Emphasize container labels
3. Explain recycling practices
4. Show how to fuel vehicles and avoid “topping off”
5. Show how to keep containers closed

Include the following elements in your training. Tell your employees to:

1. NEVER wash spilled chemicals into storm drain
2. Handle chemicals carefully
3. ALWAYS report incidents to your supervisor promptly
4. Think about impact and consequence of your actions
5. Use good judgment

Storm Water Management Enforcement in California

In May of 2007, EPA Region 9 and the Los Angeles Regional Water Quality Control Board conducted on-site audits of City of Los Angeles’ and City Long Beach’s municipal storm water programs and carried out 55 individual storm water inspections of port tenants.

As a result of these inspections, EPA issued an audit report followed by 20 Administrative Orders (AOs) on November 9, 2007 to facilities at the Ports of Los Angeles and Long Beach for being not in compliance with California’s Industrial Stormwater General Permit. The audit report and a 501-page appendix as well as copies of the Administrative Order can be found at EPA’s website.

The AOs directed many of these port tenants to correct all their deficiencies within 30 days and submit a revised SWPPP to EPA within 60 days.

One of the facilities – a gypsum manufacturing company - was cited because it:

1. Failed to develop a complete SWPPP, as required by the General Permit.
2. Failed to identify a pollution prevention team;
3. Failed to identify operation procedures for the storm drain valves;
4. Failed to adequately assess potential storm water pollution from the gypsum storage pile;
5. Failed to develop or implement BMPs for the gypsum storage pile to adequately reduce pollutant discharges to storm drains and fugitive releases to the Harbor;
6. Failed to complete an assessment of potential pollutant sources near the loading dock for the tape joint building; and
7. Failed to identify all pollutant sources on the Facility's site map;
8. Failed to implement adequate BMPs near the calcidyne enclosure and the glycol and latex process storage tanks near the tape joint building
9. Failed to visually observe storm water discharges to storm drain inlets as required by the General Permit.

Violations at other facilities included the following:

1. Inadequate structural BMP. One facility was found to have a chemical storage area that was not fully bermed.
2. Failure to have management signature on the SWPPP.
3. Poor housekeeping. Several facilities were cited for having oily stains in maintenance areas that drain toward storm drains.
4. SWPPP maps that were not sufficiently detailed.
5. Failure to follow up on chemical analysis. One facility obtained a low pH reading in one of its storm water sampling events and failed to find the cause of the problem and correct it.
6. Failed to describe topics covered in SWPPP training program.

7. Unable to produce documentation that could verify SWPPP training.

These are common violations for many SWPPPs because facilities often ignore the written plans and fail to IMPLEMENT them.

It is very easy for an agency inspector to look at the written SWPPP and compare it to what the facility has done or not done. More often than not, the written words in the plan and reality fail to match.

The issuance of 20 Administrative Orders by EPA is convincing proof that the agencies always LOOK for evidence of implementation when it comes to environmental plans such as SWPPP. It is NOT sufficient to just hire some consultants to prepare a nice looking plan for you. You actually have to pay attention to the plan and carry out what the consultants have put in the plan for you.

Any environmental management plan that calls for Best Management Practices is performance-based. SWPPP is one such example. Spill Prevention Control and Countermeasure (SPCC) is another performance-based plan.

So if you use consultants to prepare your SWPPP, you need to manage them and make sure they don't put something in your plan that you can't realistically implement.

Remember: they get paid whether you implement your plan or not.

Work with the consultants and be sure the folks who will be responsible for implementing the plan have some input into that plan. That's the only way these folks have ownership of the plan and ownership is the key to successful implementation. For example, if your plan calls for daily inspection of your chemical storage area, make sure that your maintenance staff is comfortable with such frequency. Get input from them. You want to make sure that your plan is REALISTIC so that it will be carried out.

The following pages show two actual EPA inspection reports that resulted in Administrative Orders. These inspection reports provide clear insights on what the agency looks for in a storm water inspection.

USEPA
California General Industrial Activities Storm Water Permit (CAS000001 - General Permit)
Storm Water Compliance Facility Inspection Report

WDID: 003628	Receiving Water Name:
Status Code: Active	Long Beach Inner Harbor Channel II
Facility Name: National Gypsum	Facility Size: ~ 17 Acre(s)
Facility Address: 1850 Pier B Street Long Beach, CA 90813	Impervious Area: ~ 90%
Facility Contact: Percy Pitts, Quality Supervisor	Primary SIC Code(s): 3275
Facility Phone: 562-435-4465 x 262	

Date of Inspection: 5/14/2007

Inspector(s): Amendola (AEI), Kelly (USEPA)

Type of Inspection: B Type Inspection

Facility Narrative:

National Gypsum was inspected on 5/14/2007 to determine compliance with NPDES General Permit No. CAS000001, which is held by the Port of Long Beach. National Gypsum is categorized under SIC code 3275. The inspector met with Percy Pitts, Quality Supervisor to tour the facility and review relevant storm water paperwork.

The inspection was conducted from approximately 11:00 am to 1:30 pm.

The facility manufactures gypsum wallboard. Potential storm water pollution sources include a storage pile of gypsum rock and associated fines at the southern end of the facility, including a storage dome; glycol and latex process storage tanks near the "Tape Joint Building"; oil container storage; and, fugitive particulate releases from plant buildings and operations, including the "wet waste" area at the northern end of the plant.

Possible storm water discharge locations identified from the inspection included: two storm drains at the northwest area of the facility, west of the "wet waste" area (identified as Outfall 004 on SWPPP site map); storm drains along the eastern side of the facility; a low spot at the southeast area of the facility (identified as Outfall 003 on the SWPPP site map); and, an area south and southwest of the rock pile (identified as Outfall 002 on the SWPPP site map). A storm drain is also located in an open paved area east of the "Tape Joint Building". The drains along the eastern side of the facility appeared to be equipped with valves in the closed position. The facility representative did not know if the valves are opened during rain events, or who has responsibility for operation of the valves.

Structural controls include secondary containment structures for the latex and glycol tanks and oil and hazardous waste storage. Non-structural control measures include regular sweeping of facility grounds and placement of booms around the storm drains west of the "wet waste" area prior to rain events. Best management practices and storm water controls, or lack thereof, are discussed in the Identified Areas of Potential Noncompliance section of this report.

The facility's SWPPP and visual inspection forms for the years 2006 and 2007 were reviewed. Potential items of non-compliance associated with the SWPPP and inspections are listed in the Items of Potential Non-Compliance section of this report.

USEPA
California General Industrial Activities Storm Water Permit (CAS000001 - General Permit)
Storm Water Compliance Facility Inspection Report

Identified Areas of Potential Noncompliance:

The SWPPP does not identify a pollution prevention team (CAS000001 Attachment A.3.).

The SWPPP does not contain a complete description of potential pollutant sources (CAS000001 Attachment A.6.):

As noted in the facility narrative, storm drains along the east side of the facility appeared to be equipped with valves. The SWPPP did not contain a description of when are the valves opened and closed and who has responsibility for their operation.

The SWPPP does not contain a complete assessment of potential pollutant sources (CAS000001 Attachment A.7.):

Refer to the section below addressing BMPs for the gypsum storage pile.

As noted below, the SWPPP did not contain an adequate assessment of storm water management and potential storm water pollution from the Tape Joint Building truck loading dock area.

The facility did not have sampling records for the following required activities:

The facility did not maintain complete records of monthly visual storm water discharge observations for one storm per month between October 1 and May 30 (CAS000001 Attachment B.4):

Monthly storm water visual observations have not been made at all outfalls (NPDES Permit No. CAS000001 Section B.4.a). The facility representative stated that the storm drain in the open paved area, east of the Tape Joint Building is observed during rain events, but that Outfalls 002 and 003 are not observed. Considering the potential for these outfalls to receive run-off from gypsum storage and associated fines, they should be observed during rain events. The drain that is observed during rain events is not judged to be representative of Outfalls 002 and 003. The monthly inspection forms used by the facility did not identify the location of visual observations (NPDES Permit No. CAS000001 B.4.c.) (see Exhibit 1).

The facility has not adequately implemented BMPs identified in the SWPPP (CAS000001 Section A.8.):

BMPs identified in the facility's SWPPP for gypsum rock storage and associated fines do not appear appropriate or adequate to reduce or prevent pollutants from entering storm water discharges; and, BMPs identified in the SWPPP for gypsum rock storage and associated fines were not fully implemented (NPDES Permit No. CAS000001 Section A.7. and A.8.). The SWPPP lists "periodic cleaning, good housekeeping, use tarps to cover stored material" as BMPs for gypsum rock storage (see Exhibit 2), and states that the material is "stockpiled within a storage dome". However, large amounts of gypsum rock and associated fines were exposed at the gypsum dome and were not covered with tarps, covered by the dome, or covered by another means (see attached photolog). Considering the amount of exposed material, tarp coverage may not be practical, but additional BMPs should be implemented to reduce the discharge of gypsum fines to the storm drain system and minimized fugitive releases. As shown on the facility's SWPPP site map, run-off from the exposed material would likely flow east toward Outfall 003, toward a storm drain southeast of the pile just beyond the fence line, south toward a storm drain just beyond the fence line, and southwest toward Outfall 002. A review of Port of Long Beach storm water sampling stations indicated that storm water discharges from the facility have not been recently characterized.

The SWPPP lists good housekeeping as a BMP. Good housekeeping practices were not adequately implemented near the Calcidyne Enclosure, as identified on the facility's site map. Significant amounts of white material were observed on the ground at this location (see Photo 8) (NPDES Permit No. CAS000001 Section A.8.). This area is shown on the site map as draining toward the storm drains on the eastern edge of the facility.

The SWPPP lists "good housekeeping" and "follow loading/unloading procedures" for the glycol and latex process storage tanks near the Tape Joint Building (see Exhibit 2). Evidence of tank overfilling and spillage on

USEPA
California General Industrial Activities Storm Water Permit (CAS000001 - General Permit)
Storm Water Compliance Facility Inspection Report

the outside of the secondary containment dike were observed, suggesting that proper loading/unloading procedures have not been implemented. Run-off from the tank loading/unloading area would drain to an adjacent truck dock. Housekeeping was poor in this area and the dock appeared to be equipped with a drain or sump. An out of service sump pump was located at the dock, suggesting drainage to the dock may be pumped to the surrounding area. The facility's SWPPP did not contain an adequate assessment of storm water management and potential storm water pollution from this area (i.e., an explanation of area drainage, description of potential spillage from loading / unloading operations, operation of the sump pump and the function of an unknown drain by the dock partially blocked by debris) (NPDES Permit No. CAS000001 Section A.7.).

Other issues of potential noncompliance observed during the site inspection:

As noted above, the SWPPP did not contain a pollution prevention team (NPDES Permit No. CAS000001 Section A.3.). Contact information was provided in the SWPPP for the Quality Supervisor, Plant Manager and Maintenance Supervisor. However, specific responsibilities related to storm water pollution prevention were not assigned to these individuals, as required.

Amendola (AEI), Kelly (USEPA)
Inspector Name(s)

5/15/2007
Report Date



NPDES Industrial Storm Water Investigation and Case Development Worksheet (CA Industrial)

DRAFT November 26,
2001

Background Information

National Database Information		General	
Inspection Type	Stormwater Industrial	Inspector Name	Ann Murphy/Ellen Blake
WDID Number	4 19I020148	Telephone	415-972-3640
Inspection Date	May 17, 2007	Entry Time	9:30 a.m.
Inspector Type	EPA	Exit Time	10:30 a.m.
Facility Type/SIC	3411 – Metal Cans	Signature	<i>Ann Murphy / Ellen Blake</i>

Facility Location Information			
Name/Location/ Mailing Address	Impress USA, Inc. 936 Barracuda Street Terminal Island, CA 90731		
GPS Coordinates	Latitude	unknown	Longitude unknown
Receiving Water(s)	Los Angeles Harbor		
	Name	Telephone	
Owner	Port of Los Angeles		
Operator	Impress USA, Inc.		Craig Walsh (310) 519-2448 Micheal Borne (510) 519-2467

Basic Permit Information <i>(bold one)</i>			Summary Site Evaluation*	
Permit Coverage	Y	N	Permit Coverage	S
Permit Type	General	Individual	SWPPP <i>(field review)</i>	M
Copy of SWPPP on Site?	Y	N	Records <i>(review includes maintenance, inspection training logs)</i>	S
Copy of permit on site?	UNKNOWN	N	SWPPP <i>(implementation)</i>	M

*Use the following codes: (S=Satisfactory, M=Marginal, U=Unsatisfactory, N=Not Evaluated)



NPDES Industrial Storm Water Investigation and Case Development Worksheet (CA Industrial)

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2001

SWPPP Implementation

<u>General</u>	
Industrial Activity	Facility manufactures tuna-size cans and ends. Outside activities include shipping and receiving, and material storage. Material stored outside includes solvents, coatings, waste solvents, pallets, empty drums and scraps from container stamping. Light fork lift maintenance occurs on site, not in a designated area.
Facility Description	<p>Can manufacturing production takes place indoors. There is a loading dock. There are above ground storage tanks of ether, solvent, and paint. Piping runs to the plant from these tanks. Waste solvent removed every 90 days. Storage outdoors consists of empty drums, pallets, scrap. Three storm drains used for sampling.</p> <p>The site is fully paved. Some light maintenance of fork lifts is done outdoors, onsite by Hyster contractors. The site discharges to 4 stormdrains, 3 of them located on site. Two of these stormdrains are located in the loading dock/scrap storage area.</p>

<u>Storm Water Controls</u>	
List the structural and non-structural controls employed by the facility.	Berm around wash solvent coating and waste solvent tanks. No other structural controls are present. Most work done indoors, however light washing is done outside in a small, bermed area. This area is not completely bermed and we advised the facility this area is inadequate as it did not contain all the water.
Are the controls reasonable and appropriate for the facility?	See above.
Are the controls maintained in effective operating condition?	See above.



NPDES Industrial Storm Water Investigation and Case Development Worksheet (CA Industrial)

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<p>Good Housekeeping</p>	<p>Berm is not containing all runoff from the solvent storage area. The sloped runoff on the northeast perimeter of the site runs into the street and contains some of the wash area runoff.</p>
---------------------------------	--

<p align="center"><u>Miscellaneous</u></p>	
<p>Non-Storm Water Discharges</p>	<p>Berm is not complete and not large enough to contain all the washwater. Some washwater was flowing onto the pavement then out of the gate to the street. A large quantity of unknown liquid was surrounding the scrap metal bin.</p>
<p>Any evidence of Non-Storm water Discharge?</p>	<p>Yes. See above. Additionally there were stains on the pavement in the maintenance area.</p>
<p>Do the storm water inlets correspond with site map?</p>	<p>No. Map not detailed enough.</p>

<p align="center"><u>Notes</u></p>	
<p>The SWPPP, sampling reports, and monitoring logs are very neat and clear; however the SWPPP site map is not very detailed and needs to be updated.</p>	
<p>The pH was low for a couple months on one storm drain. When questioned the Superintendent thought maybe there had been a slight solvent spill, or maybe someone had improperly thrown batteries into the scrap metal bin.</p>	
<p>Hyster contract does light vehicle maintenance onsite. Oily stains outdoors near the vehicle maintenance, which drains within a bermed area. There are some indications of oil on the pavement which drains to the street, indicating the Berm is not sufficient to hold runoff.</p>	
<p>We suggested better housekeeping and an increased berm around vehicle maintenance oil.</p>	



NPDES Industrial Storm Water Investigation and Case Development Worksheet (CA Industrial)

DRAFT November 26, 2001

SWPPP Review *(can be completed in office)*

General		Notes:
Does the SWPPP contain the signature of a responsible party?	Y N	
Is an individual/team responsible for developing/implementing SWPPP identified (e.g. pollution prevention team)?	Y N	

Site Map and Narrative		Notes:
Is there a site map?	Y N	
Drainage patterns/ outfalls?	Y N	They need to update the SWPPP to show some storage areas that have been moved inside, and drainage patterns and outfalls.
Identification of types of pollutants likely to be discharged from each drainage area?	Y N	
Location of major structural controls used to reduce pollutants in runoff?	Y N	
Name of receiving water(s) listed?	Y N	
Location of significant materials exposed to storm water?	Y N	
List of significant spills and leaks, description of response taken, and actions to prevent similar spills in the future?	Y N	NA
Location of fueling, maintenance, loading and unloading, material storage, waste disposal?	Y N	



NPDES Industrial Storm Water Investigation and Case Development Worksheet (CA Industrial)

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<u>Summary of Potential Pollutant Sources</u>		Notes:
Description of activities, materials, features of site with potential to contribute significant amounts of pollutants to storm water?	Y	N

<u>Storm Water Controls</u>		Notes:
Does the SWPPP describe the <i>non-structural</i> controls that will be used to prevent/reduce discharge of pollutants in storm water runoff?	Y	N
Does the SWPPP describe the <i>structural</i> controls that will be used to prevent/reduce discharge of pollutants in storm water runoff?	Y	N
Does the SWPPP describe other controls that will be used to prevent/reduce off-site tracking or blowing of sediment, dust and raw, final or waste materials, or other solid materials and floating debris?	Y	N
Does the SWPPP incorporate baseline controls (good housekeeping, minimizing exposure, PM, spill prevention/response procedures, routine inspections and comprehensive site evaluations, employee training, sediment and erosion control, runoff management)?	Y	N
Does the SWPPP contain completed inspection reports/logs regarding reportable implementation baseline controls?	Y	N The inspection reports are in another folder, are very neat and complete. The ph was low for a couple months on one storm drain. The facility did not take any follow-up actions.
Does the SWPPP describe the pollutant or activity to be controlled by each selected control and provide an implementation schedule?	Y	N

Appendix 3: Air Permits and Cap-and-Trade

Let's say you come into the office one morning and your production manager tells you that management has finally decided to install a new production line after a year of planning and deliberation. This new



production line is going to generate new air emissions. He has placed an order for the new equipment and he wants it installed and operational in a month's time. After all, customers are waiting to buy your products. What are you going to do?

The first thing you do is to tell your management is that they cannot physically install the equipment before the agency gives you a construction permit. The new equipment can be stored in the factory but it cannot be bolted to the ground or rendered operable until you have been issued a construction permit.

In general, the construction permitting process will take two to three months – including a 30-day public comment period. Many state agencies will process your application in an expedited manner for an additional fee. So if time is of the essence, you might want to pay the extra fee to shorten the process.

By the way, someone in your management may view this lengthy permitting process as an unacceptable delay since there are customers waiting to buy your products. Some may even threaten to contact their political representatives in the state legislature or the governor's office to "short cut" or "by-pass" the process right at the start. Some may want to hire an attorney to "raise hell" with the permitting agency. If you are faced with that situation, you should do everything within your power to discourage this kind of behavior or wishful thinking because nothing good will come of it. This is the quickest way to generate ill will within the agency and with the person who will be preparing your construction permit. Just put yourself in the permit writer's shoes. How would you like it if someone goes over your head to your boss and tries to take short cuts that may not even be legal? Do not do it. A close analogy to this kind of behavior is sending your food back to the kitchen with a complaint about the chef. Bad things will happen to your digestive system when you get your food back from the chef.

Instead of looking for “short cuts”, what you want to do is to immediately get in touch with the permit writer and provide the agency with all the necessary information for your permit. The sooner you do it and the more cooperative you are, the sooner you will get your permit. Do not play cat and mouse game with the agency. Ninety-nine percent of the time, the permit writer will work with you in a professional manner and get you that much needed construction permit as long as you treat him with professionalism. Just like you, he is doing his job. Ask and pay for the expedited service if it is available.

After you have submitted your application, the agency may have additional questions about it. Always respond to the agency’s information request fully and in a timely fashion.

Once the agency has completed your draft permit, it will send you a copy and publish a notice in your local newspaper indicating its intent to grant you your permit. You and the general public will have 30 days to review and comment on the draft permit. Now is the time to go over your draft permit with a fine tooth comb to make sure that you can live with all the permits conditions. If there are any questions about the draft permit, now is the time to raise them with the agency.

One last point: If you are hiring a consultant to obtain the permit for you, make sure that your consultant knows how to interact with the agency in a professional manner. Always remember that your consultant REPRESENTS your organization before the agency. Your consultant may be the world’s most knowledgeable person on air regulations, but if he or his company has a bad reputation within the agency for not being able to work with the permit writers or for being rude to their staff, it will be an uphill battle for you.

Keep this in mind: People work with people they like.

How to Avoid Title V Air Permits

There are ways you can “opt out” of a Title V permit – especially if you are in an attainment area. The first thing to do is to identify which emission sources are causing you to exceed the Title V thresholds and triggering the requirement for a Title V permit. Is it your industrial boilers that are emitting

more than 100 tons of NO_x? Or is the sulfur content in your fuel that is causing the problem? Or perhaps it is the amount of HAPs in your paints and solvents that are pushing you over the 10/25 thresholds for HAPs?

If your sources are your boilers, consider converting your boilers into a low-NO_x burner. If it is your fuel, switch to a lower sulfur content fuel. You will of course have to balance the added costs with the “savings” that you would incur by not having a Title V permit.

If it is the paints or solvents that you use in your production process that are generating all those HAPs (such as xylene and toluene), talk to your paint supplier and see if they can reformulate the paints into low-HAP or HAP-free paints. Remember – you are the customers. Don’t take no for an answer unless your paint suppliers or your quality control people can convince you that you cannot make a quality product without those HAPs. Change is difficult to most people. If they have been using the same old high-HAP paints for the past 20 years, you are going to meet some resistance when you ask them to change their “old habits”.



If you are in the coating business, consider switching to water-based compounds if it does not adversely impact your product quality.

An added benefit to these low-HAP or water based compounds and paints is that they are a lot friendlier to your employees. They are no longer exposed all those nasty hazardous fumes at the work place. So this would be a good time to get your safety person on board with you to support your efforts.

Once you decide to go the route of conversion, you can then re-calculate all your potential to emit (PTE) numbers. PTE are the emissions that you would be releasing to the environment if you were to operate your machinery around the clock (24/7) at maximum design capacity. You can factor in any emission control you may have if such controls are to be part of your air permit. If your PTE falls below the Title V thresholds in your

state, you are home free. You can then apply for a State Operating Permit without the burdens of a Title V permit.

What if your new calculations show that you are still over the threshold? There is another route you could take. You could apply for a Federally Enforceable State Operating Permit (FESOP) by voluntarily restricting your hours of operation and/or the amount of solvent or paint used. FESOP is also known as synthetic minor. It means that your facility is not a real minor source but the agency will treat it as one so long as you comply with the artificial conditions you impose on yourself.

You need to be very careful when you go the route of synthetic minor. First of all, all those restrictions you place on your facility can be enforceable by the federal government if you fail to live up to them. In other words, EPA could take enforcement action against your facility even though you have a state air permit. Another area you need to be sure of is your production limits. Make sure that your production folks are comfortable with the reduced production as a result of your voluntary restrictions on hours of operation and material usage. So work with your management to make sure that you will not have to increase production after you obtain your FESOP. Get it in writing from them or there will be hell to pay afterwards.

Now there are instances where you can stay below the Title V thresholds without having to place restrictions on your production simply because you reduced the HAPs from your solvents, paints and coating materials. That is the perfect scenario. One facility did just that. It approached its paint suppliers to reformulate all its paints into low or no HAP paints and it was able to switch from a Title V permit to a FESOP.

Even if you can't get out of Title V, you may be able to escape MACT (Maximum Achievable Control Technology) under the NESHAP (National Emission Standards for Hazardous Air Pollutants) program. If you are in one of the source categories and you emit more than 10/25 of HAPs, your industry will need to comply with MACT three years after the final regulations are published in the Federal Register. Many of these MACTs require total system enclosures for paint booths and/or product substitution. Total enclosure of your emission source can be very costly. If you reformulate your paints as suggested above, you may come in below the NESHAP thresholds and thus avoid MACT altogether.

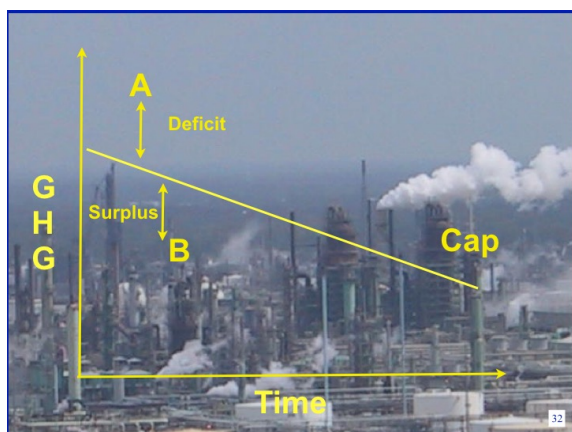
Cap-and-Trade

The concept of cap-and-trade is pretty simple. The South Coast Air Quality Management District in California has been using cap-and-trade to control the emissions of Nitrogen Oxides and Sulphur Oxides under its RECLAIM program for many years.

When applied to greenhouse gas (GHG), cap-and-trade works like this:

The agency sets up an emission limit for GHG that gradually decreases over time. That's the cap part of cap-and-trade.

If a facility exceeds its emission limit in any given year, it has the option of reducing its GHG emission by installing pollution control equipment or by purchasing emission credits in the open market.



Let's say Company A elected not to install any pollution control equipment to reduce its greenhouse gas and ends up emitting more than its allotted limit. It now has a deficit of GHG.

Company B, on the other hand, decided to invest in pollution control equipment and is now emitting less than its allotted limit. It now has a surplus of GHG that it can sell to

Company A which needs it to make up for its deficit.

That's the trade part of cap-and-trade.

Appendix 4: How to Write Readable Reports

The ability to communicate in writing is critical in an environmental manager's job.

In Chapter 14, we discuss how to make effective presentations. This appendix talks about how to write an effective environmental audit report or any report for that matter. The guidance here also applies to any kind of reports other than the ones that are very technical in nature.



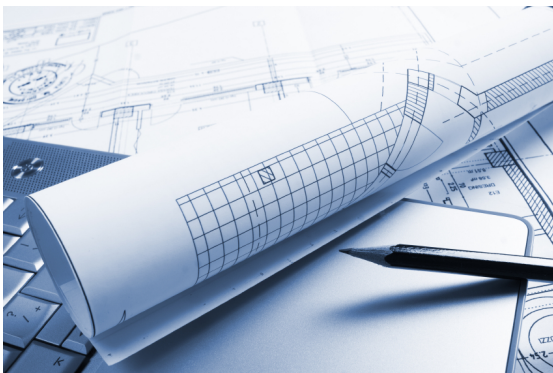
As environmental professionals, we are often called upon to communicate ideas in writing to people who are not environmental engineers. This raises the issue of how best to convey our ideas to the readers. There are three main reasons you write a business report or memo. You are either asking someone to do something or you are seeking permission to do something or you are trying to tell someone about what you have found.

The readers of your reports may be your employees, your bosses, your customers, your neighbors, stakeholders or your government. Here are several practical suggestions in report writing that will help you get your message across.

Here are a few suggestions on how to make your reports clear and easy to read:

1. Use simple language. Do not use fancy words to impress the readers. Why? Because most readers are not impressed by big words generally. Don't use words like "sustainability" unless you and your readers really understand what it means. Always use words that are familiar to your readers. That does not mean you should not use long words. The words "instantaneously" and "spontaneously" are both long but they are also familiar to most people. The word "alb" is short but it is not too familiar to many people.

2. Do not use a lot of jargons unless you know all your readers are familiar with them. The most successful managers are always the ones who can “translate” technical (legal, engineering, or financial) terms into plain English for senior management and the public. Your report should not read like a Ph.D. thesis unless of course you are writing a scientific paper for scientists.
3. Get rid of deadwood. Here are some examples. Instead of saying “in the month of August”, just say “in August”. Instead of “a fine in the amount of \$2000”, say “a \$2000 fine”. Use “daily” instead of “on a daily basis”. Don’t say “the sum exceeds more than 50”. Say “the sum exceeds 50”. Here is a general rule: Write your report as if you are being charged for every word – and not as if you are being paid for every word.
4. Avoid accusatory language in your audit report. Do not use these words: alarming, dishonest, perjured, intentional, negligent, willful misconduct, reckless, incompetent, fraudulent, dangerous, deplorable, criminal, etc. Remember the adage “praise in public and reprimand in private”. You should write your report to convey your findings and not make accusations. You can always discuss the “reckless or criminal” behavior with senior management in private.
5. Write short sentences. Break those long compound sentences into shorter ones. This just makes it a lot easier for the readers. Keep



your paragraphs to no more than 5 or 6 lines. No one wants to read a 10-page memo filled with long paragraphs. That’s why one-page memos and executive summaries are so common in the business world.

6. If you can’t squeeze all your ideas in one page, distill them in an Executive Summary. If you are discussing a complicated program, you will of course need to attach the details in a separate report.

7. Use one-sentence paragraphs to emphasis key points.
8. Stick to the facts. If you could not find a weekly inspection checklist, say so in your report. Don’t say that the weekly inspection was never done. Just because you could not locate the checklist does not mean

that the inspection was never done. The unavailability of the checklist may well be a valid separate finding.

9. Be concise and precise. If you inspected 24 drums of hazardous wastes and 17 of them did not have “hazardous waste” labels on them, say so. Don’t say “many drum have no labels on them”. Say “17 out of 24 have no labels.”
10. Avoid excessive use of acronyms. Don’t try to bedazzle your readers with your knowledge of technical terms and jargons. Keep in mind that many readers of your report are not engineers or scientists. Many senior managers are attorneys, accountants and MBAs. Acronyms such as PSD, RCRA, TRI, CERCLA, HAP, NESHAP, MACT, TSCA, RMP, PSM, etc will put them in a coma.
11. Be specific in your conclusions. If you are doing a compliance audit and everything appears to be in order, the only thing you could say is that “based on your review and visit on the day of the audit, the facility appears to be in compliance (on that day).” You cannot predict what will happen next day or next week. Now if you are doing an environmental management audit, you may be able to say something about how the facility might function in the future.
12. Tell them why. Let the readers know what you are trying to say upfront. “I am asking all of you to do this because

When people understand your reason behind what you are asking, they may buy into your idea and claim ownership. Once they have ownership, they will be much more willing to help you implement your idea. Ownership is key. No parents ever call their own babies ugly.
13. Keep the tone informal and style conversational. Think of your business report as a conversation with your readers. Remind yourself who makes up the intended audience. You are talking to the readers.
14. Instead of writing the following to your line supervisors: “Please inform all employees that in accordance with Corporate Policy 3.4.9 (b) and OSHA Standard 1910, all employees must wear safety glasses while on the job at all times.”
15. Try this: “Please remind your staff that they need to wear safety glasses for their own protection when they are on the job. We don’t want them to get hurt.” If someone wants to read your Corporate Policy 3.4.9 (b) and the OSHA standard, you can give him a copy.

A few words here about presenting your reports or findings.

There is a disturbing trend in corporate America. People no longer write reports with complete sentences. Many reports are now written in PowerPoint slides each jammed with 10 or more dreaded bullet points.

If you are thinking of presenting your reports in one of those awful PowerPoint presentations, DON'T!

Always present your findings in a concise (not truncated bullet points) written report with full sentences. Why? Because you want your readers to understand your findings and take action.

This communication problem started many years ago. Company executives started replacing written reports with PowerPoint presentations (loaded with bullet points) over 15 years ago. A presenter would speak at length and elaborate on each bullet point at the meeting for the audience. That was fine.

The REAL problem came when the PowerPoint slides were passed on down to lower level staff for implementation. There were no backup documentations. No detailed analysis. No explanatory notes. These lower level people never attended the meeting and never heard the discussions behind those bullet points. All they had was a bunch of truncated bullet points and that's where everything started to go wrong: misunderstanding, misinterpretation, miscommunication, hallucination....etc.

Millions of dollars of mistakes have been made because of this problem. Don't let that happen to you.

Appendix 5: Cal/EPA Incentives For Voluntary Disclosure

Purpose

This Guidance is designed to enhance the protection of human health and the environment by encouraging regulated entities to prevent or to discover voluntarily, disclose, and correct violations of federal, state and local environmental requirements through the use of routine, systematic application of an environmental compliance auditing program.

Definitions

For purposes of this Guidance, the following definitions apply:

"Environmental Audit" is a systematic, documented, periodic, and objective review by regulated entities of facility operations and practices related to meeting environmental requirements.

"Due Diligence" encompasses the regulated entity's systematic efforts, appropriate to the size and nature of its business, to prevent, detect, disclose, and correct violations through all of the following:

1. Compliance policies, standards, and procedures that identify how employees and agents are to meet the requirements of laws, regulations, permits, and other sources of authority for environmental requirements;
2. Assignment of overall responsibility for overseeing compliance with policies, standards, and procedures, and assignment of specific responsibility for assuring compliance at each facility or operation;
3. Mechanisms for systematically assuring that compliance policies, standards, and procedures are being carried out. These include monitoring and auditing systems reasonably designed to detect and correct violations, periodic evaluation of the overall performance of the compliance management system, and a means for employees or agents to report violations of environmental requirements without fear of retaliation;

4. Efforts to communicate effectively the regulated entity's standards and procedures to all employees and other agents whose duties involve environmental compliance;
5. Appropriate incentives to managers and employees to perform in accordance with the compliance policies, standards, and procedures, including consistent enforcement through appropriate disciplinary mechanisms; and
6. Procedures for the prompt and appropriate disclosure and correction of any violations, and for any necessary modifications to the regulated entity's program to prevent future violations.

"Environmental audit report" means the analysis, conclusions, and recommendations resulting from an environmental audit, but does not include data obtained in, or testimonial evidence concerning, the environmental audit.

"Gravity based penalties" are that portion of a penalty over and above the economic benefit of noncompliance, whether or not they are labeled as such, i.e., the punitive portion of the penalty, rather than that portion representing a defendant's economic gain from non-compliance. (For further discussion of this concept, see "A Framework for Statute-Specific Approaches to Penalty Assessments," #GM-22, 1980, US EPA General Enforcement Policy Compendium. See also the particular penalty statutes and regulations for the individual enforcing agency bringing the action).

"Regulated entity," means any person, facility, or entity, including a federal, state, or municipal agency, regulated under federal, state, or local environmental laws.

C. Incentives

This section identifies the major incentives provided to encourage self-audits, prompt disclosure and correction. These may include significantly reducing or not seeking gravity based civil penalties, declining to refer for criminal prosecution companies that self-report, and refraining from routine requests for audits.

1. Waiving Gravity Based Penalties

Where the regulated entity establishes that it satisfies all of the conditions of Section D, gravity based penalties for violations of environmental requirements may be waived if allowed by applicable statute. Gravity based penalties (defined in Section B) generally reflect the seriousness of the violator's behavior. It would be appropriate to waive a portion of such penalties for violations discovered through due diligence or environmental audits, recognizing that these voluntary efforts play a critical role in protecting human health and the environment by identifying, correcting, and ultimately preventing violations. The conditions set forth in Section D, which include prompt disclosure and expeditious correction must be satisfied for any portion of gravity based penalties to be waived.

Any economic benefit obtained as a result of noncompliance should be recovered, even when all other conditions of the Guidance are met. Economic benefit could be waived, however, if the enforcing agency determines that it is insignificant. The recovery of economic benefit is important for two reasons. First, it provides an incentive to comply in a timely manner. Taxpayers expect to pay interest or a penalty fee if their payments are late; the same principle should apply to corporations that have delayed their investment in compliance. Second, it is fair because it protects responsible companies from being undercut by their noncomplying competitors, thereby preserving a level playing field.

2. Reduction of Gravity Based Penalties

Gravity based penalties for violations of environmental requirements can be reduced to the extent the regulated entity satisfies the conditions of Section D below. The enforcing agency, may, at its sole discretion, reduce the gravity based penalties further as a credit for investment in Supplemental Environmental Projects (See Cal/EPA guidance on Supplemental Environmental Projects.). The complete waiver of gravity based civil penalties should be available only to companies that meet the higher standard of reporting as a result of conducting an environmental auditing or systematic compliance management.

However, to provide encouragement for the kind of self-policing that benefits the public, gravity based penalties can be significantly reduced for a violation that is voluntarily discovered, promptly disclosed, and expeditiously corrected, even if it was not found through an environmental

audit particularly where the company agrees to implement an environmental compliance management procedure. Cal/EPA expects that this will encourage companies to come forward and work with regulatory agencies to resolve environmental problems and begin to develop an effective compliance management program.

3. No Criminal Recommendations

The enforcing agency may decline to recommend to a prosecuting authority that criminal charges be brought against a regulated entity where they determine that all of the conditions in Section D are satisfied, so long as the violation does not demonstrate or involve:

- a. A management practice that concealed or condoned environmental violations; or
- b. Knowing or negligent involvement in or deliberate ignorance of the violations by corporate officials or managers. Whether or not an enforcing agency refers the regulated entity for criminal prosecution under this section, they may reserve the right to recommend prosecution of the criminal acts of individual managers or employees. This Guidance has important limitations. It will not apply, for example, where corporate officials are consciously and knowingly involved in, or willfully blind to, violations, or conceal or condone noncompliance. Since the regulated entity must satisfy all of the conditions of Section D, violations that caused serious harm or that may pose imminent or substantial endangerment to human health or the environment are not covered by this Guidance. Nothing in this guidance should be construed to restrict the power of a city attorney, district attorney, county counsel, or the Attorney General to bring any criminal proceeding otherwise authorized by law or to prevent an enforcing agency from cooperating with, or participating in, such a proceeding.

4. No Routine Request for Audits

It is not recommended that an enforcing agency routinely request environmental audit reports to initiate an investigation of the entity. If the enforcing agency has independent reason to believe that a violation has occurred however, it is reasonable to expect that they seek any information relevant to identifying violations or determining liability or extent of harm, including any audits that the facility may have conducted.

D. Conditions

This section describes the nine conditions that a regulated entity must meet in order for an enforcing agency not to seek (or to reduce) gravity-based penalties for violations of environmental laws. As explained in the Summary above, regulated entities that meet all nine conditions may avoid gravity-based civil penalties unless otherwise mandated by statute.

1. Systematic Discovery

The violation was discovered through:

(a) an environmental audit; or (b) an objective, documented, systematic procedure or practice reflecting the regulated entity's due diligence in preventing, detecting, and correcting violations. The regulated entity must provide accurate and complete documentation to the enforcing agency as to how it exercises due diligence to prevent, detect, and correct violations according to the criteria for due diligence outlined in Section B. The enforcing agency may require as a condition of penalty mitigation that a description of the regulated entity's due diligence efforts be made publicly available.

2. Voluntary Discovery

The violation was identified voluntarily, and not through a legally mandated auditing, monitoring, or sampling requirement prescribed by statute, regulation, permit, variance, judicial or administrative order, or consent agreement.

3. Prompt Disclosure

The regulated entity must have fully disclosed in writing to the appropriate federal, state or local agency, a specific violation promptly after the violation is discovered. Promptly is nominally defined as 21 working days or such shorter period as provided by law. The 21 day period begins when the regulated entity discovers that a violation has, or may have, occurred. The trigger for discovery is when any officer, director, employee or agent of the facility has an objectively reasonable basis for believing that a violation has, or may have, occurred. Where an entity has some doubt about the

existence of a violation, the recommended course is for it to disclose and allow the regulatory authorities to make a definitive determination.

The 21 working day period may not always be appropriate. Many laws and permits require immediate notification. In other instances where circumstances are complex, do not present a serious threat, and take longer to evaluate, disclosures within 21 days may not be practical. The enforcing agency may accept later disclosures as "prompt" where the regulated entity meets its burden of showing that the additional time was needed to determine compliance status and did not expose the public to unreasonable risk. Conversely, if the violation objectively represented an imminent threat to human health or the environment, reporting within 21 working days will not be deemed reasonable. Satisfaction of the prompt disclosure condition is solely within the discretion of the enforcing agency. This condition recognizes that it is critical for enforcing agencies to receive timely and accurate reports of violations, in order to have clear notice of the violations and the opportunity to respond if necessary. Prompt disclosure is also evidence of a facility's good faith attempt to achieve or return to compliance as soon as possible.

4. Discovery and Disclosure Independent of Government or Third Party Plaintiff

Regulated entities must have taken the initiative to find violations and promptly report them, rather than reacting to knowledge of a pending enforcement action or third party complaint. Thus this condition specifies that the violation has to have been identified and disclosed by the regulated entity prior to:

- a. The commencement of a federal, state, or local agency inspection or
- b. investigation, or the issuance by such agency of an information request to the regulated entity or related industries;
- c. Notice or commencement of a citizen suit;
- d. The filing of a complaint by a third party;
- e. The reporting of the violation to a government agency by a "whistle blower" employee, rather than by one authorized to speak on behalf of the regulated entity; or
- f. The imminent discovery of the violation by a regulatory agency.

5. Correction and Remediation

The regulated entity corrected the violations immediately, certified in writing that the violations have been corrected, and took appropriate measures as determined by the appropriate agency to remedy any environmental or human harm resulting from the violation. Where appropriate, the enforcing agency will require that to satisfy conditions 5, 6, and 8, a regulated entity enter into a publicly available written agreement, administrative consent order, variance, or judicial consent decree, particularly where compliance or remedial measures are complex or a lengthy schedule for attaining and maintaining compliance or remediating harm is required.

This Guidance requires the violation to be corrected immediately reflecting the expectation that regulated entities will move quickly to meet their obligations under the law. While it is expected that violations must be corrected immediately, there will be those violations that require longer-term remedies, such as where significant capital expenditures are involved, or where regulatory oversight is required. The regulated entity will be expected to do its utmost to achieve compliance under the law, and the appropriate enforcing agency will retain sole discretion to determine whether the regulated entity timely corrected and remediated the violations.

6. Prevent Recurrences

The regulated entity agrees in writing to take steps to prevent a recurrence of the violation, which may include improvements to its environmental auditing or due diligence efforts.

7. No Repeat Violations

The violation (or similar violation) shall not have occurred at the same facility within the past three years. This three year time period begins to run when the government has given the violator notice of the violation, without regard to when the violation cited in the notice actually occurred. For purposes of this determination, a violation includes:

- a. Any noncompliance with a federal, state, or local environmental law or regulation identified in a conviction, plea agreement, judicial order, final administrative order, consent agreement, variance, or in a notice of violation or inspection report.

- b. Any act or omission for which the regulated entity has previously received penalty mitigation from a federal, state or local agency. This condition bars repeat or chronic offenders from receiving penalty reduction and benefits both the public and law-abiding entities by ensuring that penalties are not waived for those entities that have previously been notified of violations and have failed to prevent repeat violations. The enforcing agency should consider all the facts and circumstances relating to any prior violation in determining whether it is a repeat violation. This condition applies if the entity was operating under the same ownership and/or management when both violations occurred. When the facility is part of a multi-facility organization, relief under this guidance is unavailable if the same or a closely related violation occurred as part of a pattern of similar violations at one or more of these facilities within the past five years.

8. Serious Violations Excluded

The violation is not one which (1) resulted in actual harm, or which may present an imminent or substantial endangerment to, human health or the environment, or (2) violates the specific terms of any judicial or administrative order, or consent agreement. This condition makes clear that violations that result in actual harm or which may present an imminent or substantial endangerment to public health or environment are excluded from consideration under this guidance. The Guidance also excludes penalty reductions for violating the specific terms of any judgment, order, consent agreement, or plea agreement. Once an order or agreement is in effect, there is little incentive to comply if there are no sanctions for violating its specific requirements. The exclusion in this section also applies to any failure to implement any response, removal, or remedial action covered by a written judgment, order or agreement.

9. Cooperation

The regulated entity timely and fully cooperated as requested by any regulatory agency and provided the agency with the information it needs to determine applicability of this Guidance. Cooperation includes, at a minimum; timely providing all requested documents, and access to employees and the facility; and providing assistance in investigating the violation, other related compliance problems, and any environmental

consequences related to the violations. The regulated entity must not hide, tamper with, or destroy possible evidence following discovery of potential environmental violations. This section makes clear that recalcitrant violators are excluded from consideration under this guidance. To be considered under the guidance, all entities that have been ordered or requested to come into compliance shall have done so pursuant to any time frame described by the enforcing agency. Entities that are determined to have refused lawful orders shall not benefit from their recalcitrance.

E. Economic Benefit

The enforcing agency should retain full discretion to recover any economic benefit gained as a result of noncompliance to preserve a "level playing field" in which violators do not gain a competitive advantage over regulated entities that do comply. The enforcing agency may forgive all or any portion of the penalty for violations which meet Conditions 1 through 9 in Section D, and which in its opinion do not merit the full penalty due to the insignificant amount of any economic benefit. In determining economic benefit, the enforcing agency should also take into consideration any documented expenditures the regulated entity has made to create and implement an environmental audit or due diligence program, which can be significant. Such expenditures may counterbalance the economic benefit of the violations.

F. Applicability

At the discretion of the enforcing agency, this Guidance may be applied to settlement of claims for administrative or civil penalties for violations under statutes and regulations within the jurisdiction of enforcing agencies. It is within the discretion of the enforcing agency to determine whether it is appropriate that a regulated entity that has received penalty mitigation for satisfying specific conditions under this Guidance receive additional penalty mitigation for satisfying the same or similar conditions under other policies for the same violation(s).

This Guidance sets forth factors for consideration that will guide the enforcing agencies in the exercise of their enforcement discretion, and is intended as guidance only. It does not create any rights, duties, obligations, or defenses, implied or otherwise, in any third parties. This guidance is not

promulgated in regulation or statute and as such is not binding on any Board, Department or local agency.

This Guidance can be used in settlement negotiations for both administrative and civil judicial enforcement actions. It is not intended for use in pleading, at hearing, or at trial.

The Guidance may be applied at the enforcing agency's discretion to the settlement of administrative and judicial enforcement actions instituted prior to, but not yet resolved, as of the effective date of this Guidance.

G. Scope Of Guidance

Cal/EPA has developed this document as a guide for settlement actions involving a broad range of environmental violations. All enforcing agencies are encouraged to adopt similar policies in order to assure statewide consistency in application.

H. Making Disclosures

Disclosures should be made to state and local agencies that have jurisdiction over their reported violations, i.e. to the local air district for air violations, to the local CUPA and/or the Department of Toxic Substance Control for hazardous waste violations. A copy may also be sent to Cal/EPA, attention legal unit. Reports to the US EPA should follow the guidelines set forth in their guidance.

Appendix 6: EPA Memo on the Exercise of Investigative Discretion

STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460



Office of Enforcement

January 12, 1994

MEMORANDUM

SUBJECT: The Exercise of Investigative Discretion

FROM: Earl E. Devaney, Director
Office of Criminal Enforcement

TO: All EPA Employees Working in or in Support of the Criminal Enforcement Program

I. Introduction

As EPA's criminal enforcement program enters its second decade and embarks on a period of unprecedented growth, this guidance establishes the principles that will guide the exercise of investigative discretion by EPA Special Agents. This guidance combines articulations of Congressional intent underlying the environmental criminal provisions with the Office of Criminal Enforcement's (OCE) experience operating under EPA's existing criminal case-screening criteria.¹

In an effort to maximize our limited criminal resources, this guidance sets out the specific factors that distinguish cases meriting criminal investigation from those more appropriately pursued under administrative or civil judicial authorities.²

Indeed, the Office of Criminal Enforcement has an obligation to the American public, to our colleagues throughout EPA, the regulated community, Congress, and the

¹ This guidance incorporates by reference the policy document entitled Regional Enforcement Management: Enhanced Regional Case Screening (December 3, 1990).

² This memorandum is intended only as internal guidance to EPA. It is not intended to, does not, and may not be relied upon to, create a right or benefit, substantive or procedural, enforceable at law by a party to litigation with the United States, nor does this guidance in any way limit the lawful enforcement prerogatives, including administrative or civil enforcement actions, of the Department of Justice and the Environmental Protection Agency.

media to instill confidence that EPA's criminal program has the proper mechanisms in place to ensure the discriminate use of the powerful law enforcement authority entrusted to us.

II. Legislative Intent Regarding Case Selection

The criminal provisions of the environmental laws are the most powerful enforcement tools available to EPA. Congressional intent underlying the environmental criminal provisions is unequivocal: criminal enforcement authority should target the most significant and egregious violators.

The Pollution Prosecution Act of 1990 recognized the importance of a strong national environmental criminal enforcement program and mandates additional resources necessary for the criminal program to fulfill its statutory mission. The sponsors of the Act recognized that EPA had long been in the posture of reacting to serious violations only after harm was done, primarily due to limited resources. Senator Joseph I. Lieberman (Conn.), one of the co-sponsors of the Act, explained that as a result of limited resources, ". . . few cases are the product of reasoned or targeted focus on suspected wrongdoing." He also expressed his hope that with the Act's provision of additional Special Agents, ". . . EPA would be able to bring cases that would have greater deterrent value than those currently being brought."

Further illustrative of Congressional intent that the most serious of violations should be addressed by criminal enforcement authority is the legislative history concerning the enhanced criminal provisions of RCRA:

[The criminal provisions were] intended to prevent abuses of the permit system by those who obtain and then knowingly disregard them. It [RCRA 3008(d)] is not aimed at punishing minor or technical variations from permit regulations or conditions if the facility operator is acting responsibly. The Department of Justice has exercised its prosecutorial discretion responsibly under similar provisions in other statutes and the conferees assume that, in light of the upgrading of the penalties from misdemeanor to felony, similar care will be used in deciding when a particular permit violation may warrant criminal prosecution under this Act. H.R. Conf. Rep. No. 1444, 96th Cong., 2d Sess. 37, reprinted in 1980 US Code Cong. & Admin. News 5036.

While EPA has doubled its Special Agent corps since passage of the Pollution Prosecution Act, and has achieved a presence in nearly all federal judicial districts, it is unlikely that OCE will ever be large enough in size to fully defeat the ever-expanding universe of environmental crime. Rather, OCE must maximize its presence and impact through discerning case-selection, and then proceed with investigations that advance EPA's overall goal of regulatory compliance and punishing criminal wrongdoing.

III. Case Selection Process³

The case selection process is designed to identify misconduct worthy of criminal investigation. The case selection process is not an effort to establish legal sufficiency for prosecution. Rather, the process by which potential cases are analyzed under the case selection criteria will serve as an affirmative indication that OCE has purposefully directed its investigative resources toward deserving cases.

This is not to suggest that all cases meeting the case selection criteria will proceed to prosecution. Indeed, the exercise of investigative discretion must be clearly distinguished from the exercise of prosecutorial discretion. The employment of OCE's investigative discretion to dedicate its investigative authority is, however, a critical precursor to the prosecutorial discretion later exercised by the Department of Justice.⁴

At the conclusion of the case selection process, OCE should be able to articulate the basis of its decision to pursue a criminal investigation, based on the case selection criteria. Conversely, cases that do not ultimately meet the criteria to proceed criminally, should be systematically referred back to the Agency's civil enforcement office for appropriate administrative or civil judicial action, or to a state or local prosecutor.

IV. Case Selection Criteria

The criminal case selection process will be guided by two general measures -- significant environmental harm and culpable conduct.

A. Significant Environmental Harm

The measure of significant environmental harm should be broadly construed to include the presence of actual harm, as well as the threat of significant harm, to the environment or human health. The following factors serve as indicators that a potential case will meet the measure of significant environmental harm.

³ The case selection process must not be confused with the Regional Case Screening Process. The relationship between the Regional Case Screening Process and case selection are discussed further at "VI.", below.

⁴ Exercise of this prosecutorial discretion in all criminal cases is governed by the principles set forth in the Department of Justice's Principles of Federal Prosecution.

Factor 1. Actual harm will be demonstrated by an illegal discharge, release or emission that has an identifiable and significant harmful impact on human health or the environment. This measure will generally be self-evident at the time of case selection.⁵

Factor 2. The threat of significant harm to the environment or human health may be demonstrated by an actual or threatened discharge, release or emission. This factor may not be as readily evident, and must be assessed in light of all the facts available at the time of case selection.

Factor 3. Failure to report an actual discharge, release or emission within the context of Factors 1 or 2 will serve as an additional factor favoring criminal investigation. While the failure to report, alone, may be a criminal violation, our investigative resources should generally be targeted toward those cases in which the failure to report is coupled with actual or threatened environmental harm.

Factor 4. When certain illegal conduct appears to represent a trend or common attitude within the regulated community, criminal investigation may provide a significant deterrent effect incommensurate with its singular environmental impact. While the single violation being considered may have a relatively insignificant impact on human health or the environment, such violations, if multiplied by the numbers in a cross-section of the regulated community, would result in significant environmental harm.

B. Culpable Conduct

The measure of culpable conduct is not necessarily an assessment of criminal intent, particularly since criminal intent will not always be readily evident at the time of case selection. Culpable conduct, however, may be indicated at the time of case selection by several factors.

Factor 1. History of repeated violations.

While a history of repeated violations is not a prerequisite to a criminal investigation, a potential target's compliance record should always be carefully examined. When repeated enforcement activities or actions, whether by EPA, or other federal, state and local enforcement authorities, have failed to bring a violator into compliance, criminal investigation may be warranted. Clearly, a history of repeated violations will enhance the government's capacity to prove that a violator was aware of environmental regulatory requirements, had actual notice of violations and then acted in deliberate disregard of those requirements.

Factor 2. Deliberate misconduct resulting in violation.

⁵ When this factor involves a fact situation in which the risk of harm is so great, so immediate and/or irremediable, OCE will always cooperate and coordinate with EPA's civil enforcement authorities to seek appropriate injunctive or remedial action.

Although the environmental statutes do not require proof of specific intent, evidence, either direct or circumstantial, that a violation was deliberate will be a major factor indicating that criminal investigation is warranted.

Factor 3. Concealment of misconduct or falsification of required records.

In the arena of self-reporting, EPA must be able to rely on data received from the regulated community. If submitted data are false, EPA is prevented from effectively carrying out its mandate. Accordingly, conduct indicating the falsification of data will always serve as the basis for serious consideration to proceed with a criminal investigation.

Factor 4. Tampering with monitoring or control equipment.

The overt act of tampering with monitoring or control equipment leads to the certain production of false data that appears to be otherwise accurate. The consequent submission of false data threatens the basic integrity of EPA's data and, in turn, the scientific validity of EPA's regulatory decisions. Such an assault on the regulatory infrastructure calls for the enforcement leverage of criminal investigation.

Factor 5. Business operation of pollution-related activities without a permit, license, manifest or other required documentation.

Many of the laws and regulations within EPA's jurisdiction focus on inherently dangerous and strictly regulated business operations. EPA's criminal enforcement resources should clearly pursue those violators who choose to ignore environmental regulatory requirements altogether and operate completely outside of EPA's regulatory scheme.

V. Additional Consideration When Investigating Corporations

While the factors under measures IV. A and B, above, apply equally to both individual and corporate targets, several additional considerations should be taken into account when the potential target is a corporation.

In a criminal environmental investigation, OCE should always investigate individual employees and their corporate⁶ employers who may be culpable. A corporation is, by law, responsible for the criminal act of its officers and employees who act within the scope of their employment and in furtherance of the purposes of the corporation. Whether the corporate officer or employee personally commits the act, or

⁶ The term "corporate" or "corporation", as used in this guidance, described any business entity, whether legally incorporated or not.

directs, aids, or counsels other employees to do so is inconsequential to the issue of corporate culpability.

Corporate culpability may also be indicated when a company performs an environmental compliance or management audit, and then knowingly fails to promptly remedy the noncompliance and correct any harm done.⁷ On the other hand, EPA policy strongly encourages self-monitoring, self-disclosure, and self-correction.⁸ When self-auditing has been conducted (followed up by prompt remediation of the noncompliance and any resulting harm) and full, complete disclosure has occurred, the company's constructive activities should be considered as mitigating factors in EPA's exercise of investigative discretion. Therefore, a violation that is voluntarily revealed and fully and promptly remedied as part of a corporation's systematic and comprehensive self-evaluation program generally will not be a candidate for the expenditure of scarce criminal investigative resources.

VI. Other Case Selection Considerations

EPA has a full range of enforcement tools available -- administrative, civil-judicial, and criminal. There is universal consensus that less flagrant violations with lesser environmental consequences should be addressed through administrative or civil monetary penalties and remedial orders, while the most serious environmental violations ought to be investigated criminally. The challenge in practice is to correctly distinguish the latter cases from the former.

The case-selection factors described in this guidance should provide the foundation for the communication process that necessarily follows in the Regional Case Screening Process. This guidance envisions application of the case-selection factors first, to be followed by the recurring scrutiny of cases during the Regional Case Screening process.

The fundamental purpose of Regional Case Screening is to consider criminal enforcement in the greater context of all available EPA enforcement and environmental response options, to do so early (at the time of each case opening) before extensive resources have been expended, and to identify, prioritize, and target the most egregious cases. Regional Case Screening is designed to be an ongoing process in which enforcement cases are periodically reviewed to assess not only the evidentiary

⁷ In cases of self-auditing and/or voluntary disclosure, the exercise of prosecutorial discretion is addressed in the Department of Justice policy document entitled "Factors in Decisions on Criminal Prosecutions for Environmental Violations in the Context of Significant Voluntary Compliance or Disclosure Efforts by the Violator" (July 1, 1991).

⁸ See EPA's policy on environmental audits, published at 51 Fed. Reg. 25004 (July 9, 1986)

developments, but should also value the clarity of the legal and regulatory authorities upon which a given case is being developed.⁹

In order to achieve the objectives of case screening, all cases originating within the OCE must be presented fully and fairly to the appropriate Regional program managers. Thorough analysis of a case using the case-selection factors will prepare OCE for a well-reasoned presentation in the Regional Case Screening process. Faithful adherence to the OCE case-selection process and active participation in the Regional Case Screening Process will serve to eliminate potential disparities between Agency program goals and priorities and OCE's undertaking of criminal investigations.

Full and effective implementation of these processes will achieve two important results: it will ensure that OCE's investigative resources are being directed properly and expended efficiently, and it will foreclose assertions that EPA's criminal program is imposing its powerful sanctions indiscriminately.

VII. Conclusion

The manner in which we govern ourselves in the use of EPA's most powerful enforcement tool is critical to the effective and reliable performance of our responsibilities, and will shape the reputation of this program for years to come. We must conduct ourselves in keeping with these principles which ensure the prudent and proper execution of the powerful law enforcement authorities entrusted to us.

⁹ The legal structure upon which a criminal case is built -- e.g., statutory, regulatory, case law, preamble language and interpretative letters -- must also be analyzed in terms of Agency enforcement practice under these authorities. Thorough discussion of this issue is beyond the scope of this document, but generally, when the clarity of the underlying legal authority is in dispute, the more appropriate vehicle for resolution lies, most often, in a civil or administrative setting.

Appendix 7: DOJ Guidance on Environmental Crime Prosecution

US Department of Justice
Washington DC

July 1, 1991

FACTORS IN DECISIONS ON CRIMINAL PROSECUTIONS FOR ENVIRONMENTAL VIOLATIONS IN THE CONTEXT OF SIGNIFICANT VOLUNTARY COMPLIANCE OR DISCLOSURE EFFORTS BY THE VIOLATOR

I. Introduction

It is the policy of the Department of Justice to encourage self-auditing, self-policing and voluntary disclosure of environmental violations by the regulated community by indicating that these activities are viewed as mitigating factors in the Department's exercise of criminal environmental enforcement discretion. This document is intended to describe the factors that the Department of Justice considers in deciding whether to bring a criminal prosecution for a violation of an environmental statute, so that such prosecutions do not create a disincentive to or undermine the goal of encouraging critical self-auditing, self-policing, and voluntary disclosure. It is designed to give federal prosecutors direction concerning the exercise of prosecutorial discretion in environmental criminal cases and to ensure that such discretion is exercised consistently nationwide. It is also intended to give the regulated community a sense of how the federal government exercises its criminal prosecutorial discretion with respect to such factors as the defendant's voluntary disclosure of violations, cooperation with the government in investigating the violations, use of environmental audits and other procedures to ensure compliance with all applicable environmental laws and regulations, and use of measures to remedy expeditiously and completely any violations and the harm caused thereby.

This guidance and the examples contained herein provide a framework for the determination of whether a particular case presents the type of circumstances in which lenience would be appropriate.

II. Factors to be Considered

Where the law and evidence would otherwise be sufficient for prosecution, the attorney for the department should consider the factors contained herein, to the extent they are applicable, along with any other relevant factors, in determining whether and how to prosecute. It must be emphasized that these are examples of the types of factors which could be relevant. They do not constitute a definitive recipe or checklist of requirements. They merely illustrate some of the types of information which is relevant to our exercise of prosecutorial discretion.

It is unlikely that any one factor will be dispositive in any given case. All relevant factors are considered and given the weight deemed appropriate in the particular case. See Federal Principles of Prosecution (US Dept of Justice, 1980) comments to Part A.2; Part B.3.

A. Voluntary Disclosure

The attorney for the Department should consider whether the person made a voluntary, timely and complete disclosure of the matter under investigation. Consideration should be given to whether the person¹⁰ came forward promptly after discovering the noncompliance, and to the quantity and quality of information provided. Particular consideration should be given to whether disclosure substantially aided the government investigatory process, and whether it occurred before a law enforcement or regulatory authority (federal, state or local authority) had already obtained knowledge regarding noncompliance. A disclosure is

¹⁰ As used in this document, the term's "persons" and "violators" are intended to refer to business and nonprofit entities as well as individuals.

not considered to be "voluntary" if that disclosure is already specifically required by law, regulation, or permit¹¹.

B. Cooperation

The attorney for the Department should consider the degree and timeliness of cooperation by the person. Full and prompt cooperation is essential, whether in the context of a voluntary disclosure or after the government has independently learned of a violation. Consideration should be given to the violator's willingness to make all relevant information (including the complete results of any internal or external investigation and the names of all potential witnesses) available to government investigators and prosecutors. Consideration should also be given to the extent and quality of the violator's assistance to the government's investigation.

C. Preventive Measures and Compliance Programs

The attorney for the Department should consider the existence and scope of any regularized, intensive, and comprehensive environmental compliance program; such a program may include an environmental compliance or management audit. Particular consideration should be given to whether the compliance or audit program includes sufficient measures to identify and prevent future noncompliance, and whether the program was adopted in good faith in a timely manner.

Compliance programs may vary but the following questions should be asked in evaluating any program: Was there a strong institutional policy to comply with all environmental requirements? Had safeguards beyond those required by existing law been developed and implemented to prevent noncompliance from occurring? Were there regular procedures, including internal or external compliance and management audits to

¹¹ For example, any person in charge of a vessel or of an on shore facility or an offshore facility is required to notify the appropriate agency of the United States Government of any discharge of oil or a hazardous substance into or upon inter alia the navigable waters of the United States. 311(b)(5) of the Clean Water Act, 33 USC. 1321(b) (5) , as amended by the Oil Pollution Act of 1990, Pub. L. 101-380, S 4301(a), 104 Stat. 483, 533 (1990).

evaluate, detect, prevent and remedy circumstances like those that led to the noncompliance? Were there procedures and safeguards to ensure the integrity of any audit conducted? Did the audit evaluate all sources of pollution (i.e. all media) , including the possibility of cross-media transfer of pollutants? Were the auditor's recommendations implemented in a timely fashion? Were adequate resources committed to the auditing program and to implementing its recommendations? Was environmental compliance a standard by which employees and corporate departmental performance was judged?

D. Additional Factors Which May Be Relevant

1. Pervasiveness of Noncompliance.

Pervasive noncompliance may indicate systemic or repeated participation of criminal behavior. It may also indicate the lack of a meaningful compliance program. In evaluating this factor, the attorney for the Department should consider, among other things, the number and level of employees participating in the unlawful activities and the obviousness, seriousness, duration, history, and frequency of noncompliance.

2. Internal Disciplinary Action.

Effective internal disciplinary action is crucial to any compliance program. The attorney for the department should consider whether there was an effective system of discipline for employees who violated company environmental compliance policies. Did the disciplinary system establish awareness in other employees that unlawful conduct would not be condoned?

3. Subsequent Compliance Efforts.

The attorney for the department should consider the extent of any efforts to remedy any ongoing noncompliance. The promptness and completeness of any action taken to remove the source of the noncompliance and to lessen the environmental harm resulting from the non-compliance should be considered. Considerable weight should be given to prompt, good faith efforts to reach environmental compliance agreements with federal or state authorities, or both. Full compliance with such agreements should be a factor in any decision whether to prosecute.

III Application of These Factors to Hypothetical Examples¹².

These examples are intended to assist the federal prosecutors in their exercise of discretion in evaluating environmental cases. The situations facing prosecutors, of course, present a wide variety of fact patterns. Therefore, in a given case, some of the criteria may be satisfied while others may not. Moreover, satisfaction of various criteria may be a matter of degree. Consequently, the effect of a given mix of factors also is a matter of degree. In the ideal situation, if a company fully meets all of the criteria, the result may be a decision not to prosecute that company criminally. Even if satisfaction of the criteria is not complete, still the company may benefit in terms of enforcement response by the government. The following hypothetical examples are intended to illustrate the operation of these guidelines.

Example 1:

This is the ideal case in terms of criteria satisfaction and consequent prosecution leniency.

1. Company A regularly conducts a comprehensive audit of its compliance with environmental requirements.
2. The audit uncovered as information about employees disposing of hazardous wastes by dumping them in an unpermitted location.
3. An internal company investigation confirms the audit information. (Depending upon the nature of the audit, this follow-up investigation may be unnecessary.)
4. Prior to the violations the company had a sound compliance program, which included clear policies, employee training, and a hotline for suspected violations.
5. As soon as the company confirms the violations, it discloses all pertinent information to the appropriate government agency; it undertakes compliance planning with that agency; and it carries out satisfactory mediation measures.
6. The company also undertakes to collect any false information previously submitted to the government in relation to the violations.

¹² While this policy applies to both individuals and organizational violators, these examples focus particularly upon situations involving organizations.

7. Internally the company disciplines the employees actually involved in the violations, including any supervisor who was lax in preventing or detecting the activity. Also, the company reviews its compliance program to determine how the violations slipped by and corrects the weakness found by that review.
8. The company discloses to the government the names of the employees actually responsible for the violations, and it cooperates with the government by providing documentation necessary to the investigation of those persons.

Under the circumstances Company A would stand a good chance of being favorably considered for prosecutorial leniency, to the extent of not being criminally prosecuted at all. The degree of any leniency, however, may turn upon other relevant factors not specifically dealt with in these guidelines¹³.

Example 2:

At the opposite end of the scale is company Z, which meets few of the criteria. The likelihood of prosecutorial leniency, therefore is remote. Company Z's circumstances may include any of the following:

1. Because an employee has threatened to report a violation to federal authorities, the company is afraid that investigators may begin looking at it. An audit is undertaken, but it focuses only upon the particular violation, ignoring the possibility that the violation may be indicative of widespread activities in the organization.
2. After completing the audit, Company Z reports the violations discovered to the government.
3. The company had a compliance program, but it was effectively no more than a collection of paper. No effort is made to disseminate its content, impress upon employees its significance, train employees in its application, or oversee its implementation.
4. Even after "discovery" of the violation the company makes no effort to strengthen its compliance procedures.
5. The company makes no effort to come to terms with regulators regarding its violations. It resists any remedial work and refuses to pay any monetary sanctions.

¹³ For example, If the company had a long history of noncompliance, the compliance audit was done only under pressure from regulators, and a timely audit would have ended the violations much sooner, those circumstances would be considered.

6. Because of the noncompliance, information submitted to regulators over the years has been materially inaccurate, painting a substantially false picture of the company's true compliance situation. The company fails to take any steps to correct that inaccuracy.
7. The company does not cooperate with prosecutors in identifying those employees (including managers) who actually were involved in the violation, but it resists disclosure of any documents relating either to the violations or to the responsible employees.

In these circumstances, leniency is unlikely. The only positive action is the so-called audit, but that was so narrowly focused as to be of questionable value, and it was undertaken only to head off a possible criminal investigation. Otherwise, the company demonstrated no good faith either in terms of compliance efforts or in assisting the government in obtaining a full understanding of the violation and discovering its sources.

Nonetheless, these factors do not assure a criminal prosecution of Company Z. As with Company A, above, other circumstances may be present which affect the balance struck by prosecutors. For example the effect of the violation (because of substances, duration, or amount) may be such that prosecutors would not consider it to be an appropriate criminal case. Administrative or civil proceedings may be considered a more appropriate response.

Other examples:

Between these extremes there is a range of possibilities. The presence, absence, a degree of any criterion may affect the prosecution's exercise of discretion. Below are some examples of such effects:

1. In a situation otherwise similar to that of Company A, above, Company B performs an audit that is very limited in scope and probably reflects no more than an effort to avoid prosecution. Despite that background, Company B is cooperative in terms of both bringing itself into compliance and providing information regarding the crime and its perpetrators. The result could be any of a number of outcomes, including prosecution of a lesser charge or a decision to prosecute the individuals rather than the company.

2. Again the situation is similar to Company A's, but Company C refuses to reveal any information regarding the individual violators. The likelihood of the government's prosecuting the company is substantially increased.
3. In another situation similar to Company A's, Company D chooses to "sit on" the audit and takes a corrective action without telling the government. The government learns of the situation months or years after the fact.

A complicating fact here is that environmental regulatory programs are self-policing: they include a substantial number of reporting requirements. If reports which in fact presented false information are allowed to stand uncorrected, the reliability of the system is undermined. They also may lead to adverse and unfair impact upon other members of the regulated community. For example, Company D failed to report discharges of X contaminants into a municipal sewer system, discharges that were terminated as a result of an audit. The sewer authority, though, knowing only that there have been excessive loadings of X, but not knowing that Company D was a source, tightens limitations upon all known sources of X. Thus, all of those sources incur additional treatment expenses, but company D is unaffected. Had Company D revealed its audit results, the other companies would not have suffered unnecessary expenses.

In some situations, moreover, failure to report is a crime. See, e.g., 33 USC. §1321(b) (5) and 42 USC. § 9603(b). To illustrate the effect of this factor, consider Company E, which conducts a thorough audit and finds that hazardous wastes have been disposed of by dumping them on the ground. The company cleans up the area and tightens up its compliance program, but does not reveal the situation to regulators. Assuming that a reportable quantity of a hazardous substance was released, the company was under a legal obligation under 42 USC. 9603(b) to report that release as soon as it had knowledge of it, thereby allowing regulators the opportunity to assure proper cleanup. Company E's knowing failure to report the release upon learning of it is itself a felony.

In the case of both Company D and Company E, consideration would be given by prosecutors for remedial efforts; hence prosecution of fewer or lesser charges might result. However, because Company D's silence adversely affected others who are entitled to fair regulatory treatment and because Company E deprived those legally responsible for evaluating

clean-up needs of the ability to carry out their functions, the likelihood of their totally escaping criminal prosecution is significantly reduced.

4. Company F's situation is similar to that of company B. However, with regard to the various violations shown by the audit, it concentrates upon correcting only the easier, less expensive, less significant among them. Its lackadaisical approach to correction does not make it a strong candidate for leniency.

5. Company G is similar to Company D in that it performs an audit and finds violations, but does not bring them to the government's attention. Those violations do not involve failures to comply with reporting requirements. The company undertakes a program of gradually correcting its violations. When the government learns of the situation, Company G could receive some consideration for its efforts, but its failure to disclose and the slowness of its remedial work probably mean that it cannot expect a substantial degree of leniency.

6. Comprehensive audits are considered positive efforts toward good faith compliance. However, such audits are not indispensable to enforcement leniency. Company H's situation is essentially identical to that of company A, except for the fact that it does not undertake a comprehensive audit. It does not have a formal audit program, but, as a part of its efforts to ensure compliance, does realize that it is committing an environmental violations. It thereafter takes steps otherwise identical to those of Company A in terms of compliance efforts and cooperation. Company M is also a likely candidate for leniency, including possibly no criminal prosecution.

In sum, mitigating efforts made by the regulated community will be recognized and evaluated. The greater the showing of good faith, the more likely it will be met with leniency. Conversely, the less good faith show, the less likely that prosecutorial discretion will tend toward leniency.

IV Nature of this Guidance

This guidance explains the current general practice of the Department in making criminal prosecutive and other decisions after giving consideration to the criteria described above, as well as any other criteria that are relevant to the exercise of criminal prosecutorial discretion in a particular case. This discussion is an expression of, and in no way departs from, the

long tradition of exercising prosecutorial discretion. The decision to prosecute “generally rests entirely in (the prosecutor’s) discretion.” Bordenkircher v. Hayes, 434 US 357, 364 (1978)¹⁴. This discretion is especially firmly held by the criminal prosecutor¹⁵. The criteria set forth above are intended only as internal guidance to Department of Justice attorneys. They are not intended to, do not, and may not be relied upon to create a right or benefit, substantive or procedural, enforceable at law by a party to litigation with the United States, nor do they in any way limit the lawful litigative prerogatives, including civil enforcement actions, of the Department of Justice or the Environmental Protection Agency. They are provided to guide the effective use of limited enforcement resources, and do not derive from, find their basis in, nor constitute any legal requirement, whether constitutional, statutory, or otherwise, to forgo or modify any enforcement action or the use of any evidentiary material. See Principles of Federal Prosecution (US Dept. of Justice, 1980) p. 4; United States Attorneys Manual (US Dept. of Justice, 1986) 1-1.000.

¹⁴ Although some statutes have occasionally been held to require civil enforcement actions, see. eg. Dunlop v. Bachowski, 421 US 560 (1975), those are unusual cases, and the general rule is that both civil and criminal enforcement is at the enforcement agency’s discretion where not prescribed by law. Heckler v. Chaney, 470 US 821, 830-35 (1985); Cutler v. Hayes, B18 F. 2d 879,893 (D.C. Cir 1987) (decision not to enforce are not reviewable unless the statute provides and “inflexible mandate”).

¹⁵ Newman v. United States, 382 F.2d 479, 480 (D.C. Cir. 1967).

Appendix 8: Five Bad Environmental and Safety Decisions

Here are 5 corporate management decisions that lead to disastrous outcomes. The focus here is to learn from these mistakes.

The Xcel Incident

On October 2, 2007, ten painters were trapped inside a penstock at a hydroelectric power plant in Colorado when buckets of highly ignitable solvent they used to clean their spray guns ignited. Five died from asphyxiation and smoke inhalation. Their only way out of the penstock was blocked by the fire. A penstock is a tunnel used by hydroelectric power plants to bring water down from a higher elevation to turn the turbines that generate electricity. OSHA considers it a confined space under OSHA standard 29 CFR §1910.146 which requires specific safety measures be allowed if anyone is to work inside it.

The hydroelectric power plant is owned by Public Service Company of Colorado (PSC) - a wholly owned subsidiary of Xcel Energy, Inc. in Minnesota. PSC hired a California paint company called RPI to paint the interior of its penstock in 2007.

On March 24, 2008, with the full backing of the US Department of Labor's Office of the Solicitor, OSHA issued fines of \$845,000 for 25 willful and 25 serious citations against RPI. It also issued 2 willful and 19 serious citations against Xcel with a proposed penalty of \$189,000. Both companies contested these citations and fines.

As a result of the incident in 2007, Xcel Energy and the Public Service Company of Colorado (hereafter referred to collectively as Xcel) and RPI were also indicted by a federal Grand Jury and the companies went on trial in 2011. Each company was charged with five counts of violating OSHA Regulation and Causing Death, which is punishable by a fine of not more than \$500,000 per count. The president and vice president of RPI were also charged with five counts of violating OSHA Regulation and Causing Death. These executives each faced not more than 6 months imprisonment, and a fine of up to \$250,000 for each count.

After a three week long jury trial, Xcel was acquitted of all 5 criminal counts on June 28, 2011. According to the prosecutor, Xcel paid the families of the 5 victims \$700,000 each as settlement.

Shortly after the acquittal, RPI pleaded guilty to the 5 criminal counts in a plea agreement with the government in exchange for the government dropping all charges against the executives.

The Xcel Trial

In the trial against Xcel, the government was charging the power company for willfully violating OSHA standards as an "employer" of the painters. In his instructions to the jury, the presiding judge told the jury that for Xcel to be found guilty, the government must prove beyond a reasonable doubt that:

1. The defendant is an employer (of the painters)
2. The defendant violated an OSHA standard
3. The defendant's violation was willful
4. The defendant's violation caused the death of any employee.

If the government failed to prove beyond a reasonable doubt on ANY of these 4 requirements, the jury was instructed to find the defendant not guilty.

So the entire trial hinged on whether the power company was acting as an employer of the painters. There was no mention of "host employer" in the 5 counts against the defendants. Of the 10 OSHA standards that the prosecutor cited in the counts, only ONE has a reference to "host employer".

The presiding judge gave the jury the following definition of a "host employer":

"A "host employer" under OSHA is different from an "employer". A "host employer" is a person or corporation who arranges to have employees of another employer, such as a contractor, perform work that involves permit confined space entry."

The judge also provided guidance to the jury on how to determine if a

company is an "employer" of an employee. He told the jury to consider the following factors:

1. Who hired the employee?
2. Who paid the employee's wages?
3. Whom did the employee consider his or her employer?
4. Who had the responsibility to control the employee's performance of its or her job duties?
5. Who had the power to control the employee's performance of his or her job duties?
6. Who provided the equipment the employee used to perform his or her job duties?
7. Who had the power to assign additional work to the employee?

The fact the jury was focusing its deliberation on the term "employer" was born out by a jury note to the judge asking if the terms "employer" and "host employer" were interchangeable.

The attorney for Xcel - a former US Attorney - very skillfully argued in his closing statement to the jurors that the 5 painters who died were not Xcel's employees and that Xcel acted as a "host employer". He argued that a host employer only had to inform the contractor that they needed to follow confined space entry procedures. And there was evidence that Xcel did just that.

As for the willful violations charges brought against Xcel when its own employees entered the penstock without a confined space entry permit, the defense attorney argued successfully that all those employees believed the penstock was NOT a permit required confined space because there were never any hazards when they were inside the penstock. He also pointed out that Xcel had an agreement with the contractor that no Xcel employees were to enter when the painters were working inside the penstock. This eliminated any presence of hazards in the penstock for the Xcel employees and it helped to bolster Xcel's claim that it was not a permit required confined space for its own employees. There was no willful violation of the confined space standard.

What really went wrong?

Xcel's procurement Process:

Xcel's travails started when it began to look for a contractor to paint its penstock. The US Chemical Safety Board (CSB) - an independent government agency created by Congress - conducted an investigation after the incident. One of the findings by the CSB in its October 2007 report was on Xcel's contractor selection process. According to the Board, "during the contractor selection process, Xcel managers graded RPI safety performance as zero, the lowest possible score; however, Xcel's contractor selection practices typically provided only for disqualification from the bidding process based upon financial capacity, not safety criteria".

Xcel's pre-qualification selection process was different from other industry guidelines. For example, the Construction Users Roundtable has a pass/fail system that ensures that only contractors who meet specific requirements, including safety, are allowed to compete, according to the CSB report. The Board went on to state that "the evaluation rating form (used by Xcel) stated that the score of zero did not meet Xcel's minimum requirements and required automatic rejection; however, RPI was still allowed to compete for the penstock painting contract. RPI's proposal was ranked as the best overall based primarily on its low price."

The Board also noted that prior to winning the contract with Xcel, RPI had a long history of safety violations with OSHA. Federal and state OSHA had inspected the company 46 times since 1972. Of these inspections, 31 had been initiated due to a complaint, referral, or accident; 90 violations were issued with fines totaling \$135,569. This information was readily available on OSHA's website.

According to the Board's report, "RPI did not disclose to Xcel regulatory violations resolved within the requested three-year period as part of the RFP evaluation process. Xcel's corporate policies addressing contractor selection relied upon self-reporting and did not include specific procedures to verify the contractor's submissions."

In March of 2006, RPI (operating under the name of Robison-Prezioso) agreed to pay a penalty of \$145,000 to the Department of Toxic Substances Control (DTSC) in California to settle violations that included illegally disposing of hazardous waste and making false statements to

government officials. This information was also readily available on DTSC's website.

A common indicator insurance industry uses to gauge safety performance is the Safety Experience Modification Rate (EMR). It is used to determine premiums for workers' compensation insurance. An EMR less than 1 indicates above-average injury and illness performance (a safer company) and an EMR greater than 1 indicates below-average performance (a less safe company).

RPI's EMR was trending upward from 1.03 in 2005 to 1.28 in 2006, according to the CSB report. Xcel's "contractor evaluation team" was aware that under its own company policies, an EMR of 1.0 or above was unacceptable. The RFP evaluation form the team used has a safety scoring system that ranges from 0-5 with "0" representing the lowest score. A score of "0" is defined on the scoring sheet as "does not meet minimum requirements, automatic rejection."

But in the end, PRI's pre-qualification bid was not rejected. In other words, the selection team did not follow its own policy.

The CSB suggested that RPI was hired nonetheless based on cost.

There were two contractors bidding for the painting job: Certified Coatings Company (CCC) and RPI.

They are at least \$500,000 over budget. The second best evaluated proposal is RPI. Their safety EMR is high although their OSHA incident rate does not reflect a safety problem. Their proposal is very close to budgetary requirements.

Xcel's budget for the painting job was \$1.3 million. The company issued a Purchase Order to RPI for \$1,148,250 on October 5, 2007 - three days before the fatal incident.

Although Xcel was cleared of any wrong doing in the 5 criminal counts against it, it is reasonable to suggest that had the company followed its own contractor selection policy and hired a contractor with a better safety record at a higher price (\$500,000 above its budget), the deaths of the 5 workers might not have happened. The overall resultant financial impact on the

company and its insurer would have been much lower. The company would not have to pay millions of dollars to the victims' families and it would not have to endure the spectacle of a criminal trial and bad publicity - plus the legal fees incurred in defending itself in court.

The \$500,000 it "saved" by going with the lowest bidder with a highly questionable safety record might have cost the company much more in the end.

In his closing argument before the jury, the defense counsel stated "We are not charged with violating our corporate policy. And a violation of corporate policy is not a violation of the law." He was also quoted in the news media as saying: "Ignorance, mistakes, accidents - none of these things are crimes."

RPI's Management Decision

On December 19, 2011, RPI pleaded guilty to five counts of willfully violating OSHA's confined space entry permit regulations that resulted in the deaths of five of its employees. In exchange for the plea, the government dropped all charges against the executives and one count of obstruction of justice.

In its plea agreement, the company admitted to the following 21 facts with the government:

1. It did not properly evaluate the workplace to determine whether any spaces were permit-required confined spaces.
2. It did not inform exposed employees of the existence and location of and the danger posed by the permit spaces.
3. It did not develop and implement a written permit space program.
4. It did not identify and evaluate the hazards of the penstock before its employees entered it.
5. It installed a ventilation system in the penstock that was insufficient to ventilate it as necessary to eliminate and control atmospheric hazards.
6. It failed to maintain components of ventilation system that were necessary to obtain acceptable entry conditions.
7. It failed to monitor the air where employees working in the penstock.
8. It failed to develop and implement procedures for rescuing employees from permit spaces.

9. It failed to review its entry operations and failed to revise its permit space entry program.
10. It failed to evaluate a prospective rescue service's ability to respond to a rescue summons in a timely manner.
11. It failed to evaluate a prospective rescue service's ability to function appropriately while rescuing entrants from the penstock.
12. It failed to select a rescue service that was capable of reaching victims within a time frame that was appropriate.
13. It failed to inform any rescue services of the hazards they may confront when called on to perform a rescue at the site.
14. It failed to provide the selected rescue service with access to all permit spaces from which rescue may be necessary.
15. It maintained MEK (highly volatile solvent) inside the penstock in uncovered buckets when not actually in use.
16. It used MEK, a class 1 liquid, inside the penstock where there were sources of ignition within the possible path of vapor travel.
17. It drew and transferred MEK into vessels, containers, and portable tanks within the penstock by various means, including by pouring MEK from plastic buckets into the sprayer's hoppers, and by pumping MEK from plastic buckets into the sprayer.
18. It failed to take adequate precautions to prevent the ignition of flammable vapors, in that it failed to adequately control and eliminate MEK vapors and all sources of ignition.
19. It selected certain equipment that was not rated to be used in classified locations, including lights, sprayer and power distribution centers.
20. It used a sprayer inside the penstock that did not have a permanent, continuous and effective path to ground.
21. It failed to distribute portable fire extinguishers inside the penstock.

The guilty plea and immediate sentencing took place before Chief US District Court Judge Wiley Y. Daniel. Following the guilty plea RPI was sentenced to 5 years probation.

According to the US Department of Justice, the company also "agreed to make changes to their safety practices. The US Probation Department will monitor the company to ensure these changes are made."

RPI also agreed to pay \$1,650,000 in penalties and compensation, of which \$1,275,000 will go to the families of the victims. The rest went to attorneys who represented the victim suing the company in civil litigation. If

the company fails to comply with the stringent terms of Probation, it could face an additional \$2,500,000 fine.

Pelican Refinery

Pelican Refinery Company, LLC. (PRC) is a crude oil and asphalt refining plant in Lake Charles, Louisiana. It is classified as a major source under the federal Clean Air Act and operates under a Title V air permit. For a long period of time, the facility operated without an environmental budget, an environmental department and did not have an environmental manager, regulatory specialist or anyone specifically tasked with complying with environmental regulations.

Its air scrubber and continuous emission monitoring system designed to control and track the emission of hydrogen sulfide - an extremely hazardous substance under Federal regulations - were in disrepair or inoperable. Its process flare - designed to burn off any remaining hydrogen sulfide - was not functioning for over a year in 2006.

The refinery's crude oil storage tanks had floating roofs designed to prevent the emission of volatile organic compounds and hydrogen sulfide. The company ignored directive from the Louisiana Department of Environmental Quality's inspectors to repair one of the floating roofs that had collapsed and continued to store crude oil in it.

In some of the photographs taken by the inspector and submitted as exhibits in court, the company was shown using children's inflatable plastic swimming pools as secondary containments. The company also repeatedly used a flare gun purchased at Wal-Mart to re-ignite the process flare when the pilot light was not working properly.

The company was required under a permit to utilize carbon beds to scrub the volatile organic compounds at its asphalt loading dock. The company never installed these beds. And yet the plant manager and the Vice President both signed and submitted a deviation report to the Louisiana Department of Environmental Quality that falsely stated: "A contractor is currently working on building a treater system that will have carbon canister controls."

These egregious actions of the company resulted in the execution of a

Federal search warrant in November 2007. The Department of Justice filed three criminal charges against the company for violation of its Title V air permit and obstruction of justice.

In July 2011, the company pleaded guilty to all three criminal charges and was sentenced to 5 years of organizational probation and \$10 million criminal fine and a community service fine of \$2 million.

In its Joint Factual Statement⁸ with DOJ, the company also acknowledged that “its negligence in overseeing operations at the refinery and failing to provide adequate funding for environmental compliance were a proximate cause of the releases and associated risks and failure to comply with permit requirements.”

The Government filed two criminal counts against the company’s vice president for “placing other persons in imminent danger of death or serious bodily injury” under the Clean Air Act and a similar criminal count against the plant manager. Both have pleaded guilty and could face up to one year in prison and \$200,000 fine for each count.

The BP Texas City Explosion

On March 23, 2005, the BP Texas City refinery had a catastrophic explosion resulting in 15 deaths and more than 170 injuries. It was one of the deadliest US workplace disasters in history.

Following the incident, BP appointed James Baker III - the former Secretary of State under President George H.W. Bush - to head up the B.P. US Refineries Independent Safety Review Panel. The purpose of this panel was to review the root causes of the incident and make recommendations to BP.

The panel was set up at the urging of the US Chemical Safety Board to “assess and report on the effectiveness of BP North America’s corporate oversight of safety management systems at its refineries and its corporate safety culture.”

In the course of the panel’s review, it came to light that BP had done an internal audit of the Texas City refinery in 2003 - two years before the fatal

explosion. The audit report was entitled "getting HSE right". This internal audit report stated that "the current condition of the infrastructure and assets is poor at Texas City refinery". There was a checkbook mentality at the plant and this had limited HSE and general performance.

The following were some of the recommendations of the internal audit team:

- Accepts zero-tolerance for exceptions to BP's HSE standards.
- Embed Process Safety Management systems fully at all sites.
- Create a sharper linkage of HSE to small capital projects.

Another significant recommendations was that HSE management was in place and functional but a well coordinated self-monitoring process was not evident.

Significant gaps were identified in the audit report. These included:

- Leadership has not prioritized action plans based on resource demand.
- Leadership has not embedded or enrolled the organization to a high performance expectation.
- HSE actions items were allowed to become past due and remain in that status without intervention.
- Budget and HSE priorities are not aligned.

The internal audit findings were issued on September 22, 2007 and one of the recipients was BP's Vice President of HSE.

The Baker Panel observed that BP management was slow in implementing these recommendations.

In less than two years, another catastrophic explosion killed 15 workers. In 2002, BP's executives had commissioned a study by a management consulting firm to look at the mechanical integrity, training, safety, and economic opportunities at the Texas City plant. The consultants reported "vulnerability in both the process units and infrastructure". The report indicated that "there were serious concerns about the potential for a major site incident due to the large number of hydrocarbon releases (over 80 in the 2002-2001). The study also found that many inspections were overdue and issues concerning instrumentation needed to be addressed.

Just two months before the explosion, BP hired a safety culture consultant to perform a safety survey among its employees. The survey showed there was an “exceptional degree of fear of catastrophic incidents at Texas City.”

This echoed the findings in the 2002 study.

There had been two fatalities at the facility prior to and four more fatalities after the 2005 explosion, according to OSHA’s record.

In the aftermath of this incident, BP was fined \$137 million by EPA. In September 2005, BP signed a settlement agreement with OSHA to correct all the violations related to its process safety management system and agreed to pay a \$21.36 million civil fine.

In 2009, OSHA conducted a followup inspection of the refinery and discovered that the company had not comply with the terms of the 2005 agreement. OSHA issued its largest civil fines in its history with a proposed penalty of \$87.43 million for failure-to-abate.

The BP Gulf of Mexico Oil Spill of 2010

The massive oil spill from BP’s offshore drilling rig began on April 20, 2010 and did not end until four months later. It is officially the worst environmental disaster in US history.

There were numerous government investigations into what caused the accident and how it could have been prevented. The federal government initiated a criminal probe¹² into the accident and a Presidential Commission was formed to look into the root causes of the incident.

A former BP drilling engineer was indicted on April 24, 2012 on two counts of obstruction of justice. The government alleges that the BP engineer destroyed emails and text messages in an effort to hide the true volume of oil spilled.

One of the most alarming findings after the incident was that BP’s 582-page emergency plan entitled “BP Gulf of Mexico Regional Oil Spill Response Plan” dated June 30, 2009 was willfully inadequate.

There was no specific plans to deal with an oil spill of the magnitude that

happened. According to the plan, the TOTAL worst case discharge from an uncontrolled blowout from an exploratory well off shore was 250,000 barrels. The low estimate from the federal government on the amount of oil spilled was around 20,000 barrels per day. That's 600,000 barrels per month.

There was no detailed discussion in the 582-page response plan on how to stop a deep oil well blowout. There were no Plan A, Plan B or Plan C outlined in the Response Plan to address the enormous spill. There was no mention of "Top Hat" or "Top Kill" in the plan. The engineers had to start from square one. That's why it had taken BP so long to stop the blowout. In fact, the Financial Times of London quoted BP's CEO on June 3 as saying it was "entirely fair" to criticize the company's preparations. The CEO went on to say that "what is undoubtedly true is that we did not have the tools you would want in your tool kit."

The 582-page plan was prepared by an outside contractor. Parts of the BP plan contain boilerplate languages used by other plans elsewhere. One example that had been cited by the media and much to BP's embarrassment is that the BP plan actually lists walruses as among the Gulf of Mexico's sensitive biological resources. Walruses live in the Arctic and sub-Arctic regions and not in the balmy Gulf waters. The contractor who prepared this plan had offices in Alaska. A reasonable person could infer that the reference to walruses might have come out of a spill response plan that had been prepared for the frigid waters off Alaska.

In fact, the mistakes in the BP plan were not aberrations. The same contractor also prepared Gulf of Mexico plans for Chevron, ConocoPhillips, ExxonMobil, Shell, and other companies operating in the Gulf. The Commission noted that all four companies had "nearly identical plans that repeat the same mistakes found in the BP plan". They all referenced walruses as a biological resource in the Gulf.

According to the Presidential Commission on the BP Oil Spill, "neither BP, in crafting its Oil Spill Response Plan for the Gulf of Mexico applicable to the Macondo well, nor Marine Management Services (MMS) in approving it, evidenced serious attention to detail". There were a lot of cutting and pasting in preparing that Response Plan. The Commission pointed out that "the BP plan identified three different worst-case scenarios that ranged

from 28,033 to 250,000 barrels of oil discharge and used identical language to “analyze” the shoreline impacts under each scenario”.

The Commission also noted that “half of the “Resource Identification” appendix (five pages) to the BP Oil Spill Response Plan was copied from material on NOAA websites, without any discernible effort to determine the applicability of that information to the Gulf of Mexico. As a result, the BP Oil Spill Response Plan described biological resources nonexistent in the Gulf - including sea lions, sea otters, and walrus”.

The final humiliation came when the Presidential Commission pointed out that a wildlife expert cited in the BP Response Plan as a resource to call upon in the event of a spill had passed away several years before BP submitted its plan to the government for approval.

What are the Lessons Learned from these catastrophes?

In the five examples cited above, these are the lessons one can take away.

Lesson#1: Never select a contractor to fit your budget.

The hydroelectric power plant’s failure to select the right contractor played a role in the death of 5 workers which led to its subsequent criminal prosecution. A better approach would have been to require contractors to meet pre-bid qualifying safety criteria. Once pre-bid qualifications were met at these facilities, cost then became the determining factor in selection. This could have been Xcel’s model.

There are many organizations such as Construction Users Roundtable (CURT)16, American National Standards Institute (ANSI), American Petroleum Institute (API) and American Industrial Hygiene Association (AIHA) that have developed industry standards for selection of contractors. Many of them include safety record as integral part of the pre-selection process - a pass/fail system that ensures that only contractors with acceptable safety performance are allowed to bid on major contracts. API has recommended practice for contractor selection. It includes the following statement; “An owner can get an indication of a contractor’s past safety performance by reviewing the contractor’s EMR. A comparison of the EMRs of contractors bidding on a project may improve the selection process.”

The Business Roundtable of America recommended in its 1982 Report “Improving Construction Safety Performance” that “companies should make safety an important consideration in the selection of contractors for bidding on their construction projects, including evaluation of contractors’ safety performance, safety attitude, and present programs and practices”.

One of the seminal studies on contractor safety was done by the John Gray Institute. The John Gray Institute Report was commissioned by OSHA in 1989 to examine the health and safety issues related to the use of contractors in the US Petroleum industry. This was a result of catastrophic explosions and fires that occurred at the Phillips 66 Company's Houston Chemical Complex resulting in 23 deaths and more than 130 injuries. OSHA specifically directed the Institute to examine “the role of safety and health in the selection of contractors”

The John Gray Institute began work on this project in December 1989. The study addresses the extent of industry reliance upon contract employees; the nature of work performed by contractors; the role of safety records in contractor selection; the training provided to employees and the supervision accorded to safety and health compliance for contract operations as compared with that for company operations; and injury/illness recordkeeping.

The study concluded that there is “an association between rigorous screening practices for contractors and positive outcomes.” The screening practices not only include “the collection of comprehensive safety data and 16 CURT is an industry organization that promotes industry standards on safety, training and worker development. Its membership includes ExxonMobil, Dow Chemical, Intel, Proctor & Gamble, Duke Energy, General Motors, Shell and the US Army Corp of Engineers. the verification of safety programs, but also involves further analysis of contractor capabilities”.

Another finding in the Grey Institute report suggests that there’s a “relationship between the application of more rigorous safety screening processes and the retention of contractors who provide more extensive safety training to the hourly employees.”

The Grey Institute Report resulted in OSHA's inclusion in the Process Safety Management standards that employers "shall obtain and evaluate information regarding the contract employer's safety performance and programs". This requirement was codified in OSHA standard 29CFR 1910.119(h)(2)(ii).

Xcel's problem started when it hired a contractor with a known history of poor health and safety performance. Such information was readily available in the public domain. All management had to do was to review PRI's safety records and make a determination that the company was probably not a good candidate for the job. Instead, management seemed to have chosen cost over safety and took a huge gamble and lost.

Lesson #2: Failure to comply with safety standards can have dire consequences.

RPI knowingly ignored OSHA's standards for confined space entry and put its workers at risk. In its admission before the court, the company pleaded guilty to all 17 counts of willful violations that caused the deaths of five employees.

Lesson #3: Plants with major permits require an environmental staff.

The Pelican Refinery case is a classic example of flagrant violation of environmental laws by a company that had the financial resources to comply with such laws.

If the company had set up a basic level of compliance program, the government probably would not be prosecuting the case as environmental crimes. The egregious nature of the violations which placed the health and welfare of its neighbors and workers at risk from the emission of hazardous chemicals forced the government to prosecute the company.

The lesson from the Pelican Refinery case is that if a company's operation is big enough to warrant a Title V air permit, it needs to have an environmental staff and budget.

Lesson #4: Always follow through with audit results and comply with consent agreement deadlines.

Over a three year period, senior management at BP had commissioned numerous studies and internal audits aimed at rooting out the underlying causes of its poor safety record at the Texas City refinery. HSE audits pointed to a disconnect between maintenance priorities and funding. Safety culture survey just a few months before the explosion showed an exceptional level of fear among the workers about a pending catastrophe. According to various independent investigations, management accepted the findings of these reports and yet failed to take corrective actions in a timely manner.

Failure to take corrective actions that have been agreed to with an agency is a blueprint for disaster. BP signed a legally binding document with OSHA in September of 2005 to correct all the safety process management deficiencies at its Texas City Refinery and failed to abate them. The agency issued its largest civil penalty in history.

Lesson #5: Generic Emergency Response Plans never work.

Despite its massive volume (582 pages), the BP oil spill response plan contained none of the different remedies that BP actually had to implement since the spill. A spill response plan or a contingency plan must focus on site-specific environmental conditions. Padding these plans with boilerplate cut-and-paste language and fluff does not work. All the flowery language in its 582-page had not helped BP plug a massive leaking well in a timely fashion. Another valuable lesson learned is that if an outside consultant or contractor is hired to write a plan, the owner of the plan need to READ the plan carefully before accepting it.

There is no such thing as a fail-safe system. Engineers and experts have assured the public repeatedly that an accident of such magnitude could never happen or are extremely unlikely to happen. Well it happened. The experts have been proven wrong once again.

If you follow the above suggestions, you should be able to avoid environmental compliance nightmare.

Appendix 9: Common Environmental Terms

Abandoned. For purposes of defining a material as a solid waste under RCRA Subtitle C, a material that is disposed of, burned, or incinerated.

Accumulated Speculatively. Storage of a material in lieu of expeditious recycling. Materials are usually accumulated speculatively if the waste being stored has no viable market or if a facility cannot demonstrate that at least 75 percent of the material has been recycled in a calendar year.

Acknowledgment of Consent. Notice sent by EPA to an exporter of hazardous waste, indicating that the importing country has agreed to accept such waste.

Administrative Action. Enforcement action taken by EPA or a state under its own authority, without involving a judicial court process.

Administrative Procedures Act. The Act that establishes rulemaking procedures as well as site-specific licensing procedures, access to agency information, and procedures and standards for judicial review of agency actions. All environmental rulemakings proposed and finalized by EPA include public participation throughout the process.

Aggregation Points. Centers that accept used oil only from places owned by the same owner and operator as the aggregation point, or from do-it-yourselfers.

Alternative Concentration Limits. For purposes of TSDF ground water monitoring, hazardous constituent limits established by the EPA Regional Administrator that are allowed to be present in ground water.

Applicable or Relevant and Appropriate Requirements. Standards, criteria, or limitations under federal or more stringent state environmental laws, including RCRA, that may be required during a Superfund remedial action, unless site-specific waivers are obtained.

Authorized State. A state that has been delegated the authority by EPA to implement and enforce its own regulations for hazardous waste management under RCRA. The state program must be at least as stringent as the federal standards.

Basel Convention. The international treaty that establishes standards for global trade of hazardous waste, municipal waste, and municipal incinerator ash. Because the United States is not a party to the convention,

US businesses can only export waste to those countries with which the US government has negotiated a separate waste trade agreement.

Bentsen Wastes. Geothermal exploration, development, and production waste exempt from RCRA Subtitle C regulation.

Best Demonstrated Available Technology. The technology that best minimizes the mobility or toxicity (or both) of the hazardous constituents for a particular waste.

Bevill Wastes. Fossil fuel combustion wastes, mining and mineral processing wastes, and cement kiln dust wastes exempt from RCRA Subtitle C regulation.

Biennial Report .A report submitted by hazardous waste LQGs and TSDFs to enable EPA and the states to track the quantities of hazardous waste generated and the movements of those hazardous wastes.

Boiler. An enclosed device that uses controlled flame combustion to recover and deliver energy in the form of steam, heated fluid, or heated gases.

Bottom Ash. Ash that collects at the bottom of a combustion chamber.

Burners. Handlers who burn used oil for energy recovery in boilers, industrial furnaces, or hazardous waste incinerators.

Burning for Energy Recovery. Burning hazardous waste for its heating value as a fuel, and using wastes to produce fuels or as ingredients in fuels.

By-Products. Materials that are not one of the intended products of a production process and includes most wastes that are not spent materials or sludges.

California List. Interim LDR treatment standards that ensured adequate protection of human health and the environment during the time EPA was promulgating final LDR treatment standards.

Capacity Assurance Plan. A written statement which ensures that a state has hazardous waste treatment and disposal capacity. This capacity must be for facilities that are in compliance with RCRA Subtitle C requirements and must be adequate to manage hazardous wastes projected to be generated within the state over 20 years.

Cathode Ray Tubes. Vacuum tubes, made primarily of glass, which constitute the video display component of televisions and computer monitors. These tubes are generally hazardous for lead.

Cement Kiln Type of industrial furnace that receives hazardous waste to burn as fuel to run its cement process. Cement is produced by heating mixtures of limestone and other minerals or additives at high temperatures in a rotary kiln, followed by cooling, grinding, and finish mixing.

Characteristic Waste. Waste that is considered hazardous under RCRA because it exhibits any of four different properties: ignitability, corrosivity, reactivity, and toxicity.

Civil Action. A formal lawsuit, filed in court, against a person who has either failed to comply with a statutory or regulatory requirement or an administrative order, or against a person who has contributed to a release of hazardous waste or hazardous constituents.

Clean Air Act. The Act that regulates air emissions from area, stationary, and mobile sources. CAA limits the emission of pollutants into the atmosphere in order to protect human health and the environment from the effects of airborne pollution.

Clean Closure. The process of completely removing all waste that was treated, stored, or disposed in a hazardous waste unit.

Clean Water Act. The Act that sets the basic structure for regulating discharges of pollutants to surface waters of the United States. CWA imposes contaminant limitations or guidelines for all discharges of wastewater into the nation's waterways.

Closure. The procedure that a solid or hazardous waste management facility undergoes to cease operations and ensure protection of human health and the environment in the future.

Codification. The process by which final regulations are incorporated into the CFR, which is published annually.

Collection Centers. Centers that accept used oil from multiple sources, including both businesses and private citizens.

Combustion. The controlled burning in an enclosed area as a means of treating or disposing of hazardous waste.

Commercial Chemical Products. Unused or off-specification chemicals, spill or container residues, and other unused manufactured products that are not typically considered chemicals. For the purposes of hazardous waste listings, CCPs include only unused, pure chemical products and formulations.

Compliance Monitoring. For purposes of RCRA TSDf ground water monitoring, a program that seeks to ensure that the amount of hazardous

waste that has leaked into the uppermost aquifer does not exceed acceptable levels.

Composting. Processes designed to optimize the natural decomposition or decay of organic matter, such as leaves and food. The end product of composting is a humus-like material that can be added to soils to increase soil fertility, aeration, and nutrient retention.

Comprehensive Environmental Response, Compensation, and Liability Act. The Act that authorizes EPA to clean up uncontrolled or abandoned hazardous waste sites and respond to accidents, spills and other emergency releases of hazardous substances. CERCLA provides EPA with enforcement authority to ensure that responsible parties pay the cleanup costs of remediating a site contaminated with hazardous substances.

Comprehensive Environmental Response, Compensation, and Liability Information System. A computerized database used to track hazardous substance sites.

Comprehensive Performance Testing. The initial and periodic evaluation procedure for demonstrating compliance with the national emission standards for hazardous air pollutants and establishes revised operating limits for hazardous waste combustors.

Comprehensive Procurement Guidelines. A list, updated every two years, which designates items with recycled content that procuring agencies should aim to purchase. This list currently contains 61 items within 8 product categories.

Concentration Limits. For purposes of TSDf ground water monitoring, the maximum levels of hazardous constituents allowed to be present in the ground water.

Conditionally Exempt Small Quantity Generators. Facilities that produce less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste, per calendar month. A CESQG may only accumulate less than 1,000 kg of hazardous waste, 1 kg of acutely hazardous waste, or 100 kg of spill residue from acutely hazardous waste at any one time.

Construction Quality Assurance. A program required by EPA to ensure that a landfill, surface impoundment, or waste pile meets all of the technological requirements.

Contained-In Policy. An EPA policy that determines the health threats posed by contaminated environmental media and debris, and whether such materials must be managed as RCRA hazardous wastes.

Containers. Portable devices in which a material is stored, transported, treated, or otherwise handled.

Containment Building A completely enclosed structure used to store or treat noncontainerized waste.

Continuous Emission Monitoring Systems. A system that directly and continuously measures one or more pollutants exiting a combustion unit.

Continuous Monitoring Systems. A device which continuously samples the regulated parameter without interruption, evaluates the detector response at least once every 15 seconds, and computes and records the average value at least every 60 seconds.

Corporate Guarantee. The demonstration that a corporate grandparent, corporate parent, or sibling corporation can meet financial assurance requirements on behalf of a TSDF owner and operator. Firms with a “substantial business relationship” with an TSDF owner and operator can also make this demonstration.

Corrective Action. An EPA program to address the investigation and cleanup of contamination from solid and hazardous waste facilities.

Corrective Action Management Unit. A physical, geographical area designated by EPA or states for managing remediation wastes during corrective action.

Corrosivity Characteristic. The characteristic which identifies wastes that are acidic or alkaline (basic) and can readily corrode or dissolve flesh, metal, or other materials.

Counting. Totaling the hazardous wastes at a given facility for a particular month in order to determine hazardous waste generator status.

Covered States. States that participated in EPA’s medical waste tracking program from June 22, 1989 to June 22, 1991, which included Connecticut, New Jersey, New York, Rhode Island, and the Commonwealth of Puerto Rico.

Cradle to Grave. The time period from the initial generation of hazardous waste to its ultimate disposal.

Criminal Action. Enforcement action reserved for the most serious violations, which can result in fines or imprisonment.

De minimis. Very small amounts of hazardous waste that are discharged to wastewater treatment facilities and thus, are exempt from the mixture rule.

Debris. A broad category of large manufactured and naturally occurring objects that are commonly discarded (e.g., construction materials, decommissioned industrial equipment, discarded manufactured objects, tree trunks, boulders).

Delisting. A site-specific petition process whereby a handler can demonstrate to EPA that a particular waste stream generated at its facility that meets a listing description does not pose sufficient hazard to warrant RCRA regulation. Owners and operators can also use the delisting process for wastes that are hazardous under the mixture and derived-from rules that pose minimal hazard to human health and the environment.

Derived-From Rule. A rule that regulates residues from the treatment of listed hazardous wastes.

Designated Facility. A hazardous waste treatment, storage, or disposal facility which has received a RCRA permit (or interim status), or is a recycling facility regulated under 40 CFR Section 261.2(c)(2) or Subpart F, of Section 266, and has been designated on the manifest by the generator.

Destination Facilities. Facilities that treat, dispose of, or recycle a particular category of universal waste.

Destruction and Removal Efficiency. Standard which verifies that a combustion unit is destroying the organic components found in hazardous waste.

Detection Monitoring. For purposes of RCRA TSDf ground water monitoring, the first step of monitoring at land disposal units, where the owner and operator monitors for indication of a leak from the unit, looking for potential changes in the ground water quality from normal (background) levels.

Dilution Prohibition. The LDR requirement that prohibits the addition of soil or water to waste in order to reduce the concentrations of hazardous constituents instead of treatment by the appropriate LDR treatment standards.

Direct Discharges. Discharges from point sources into surface water pursuant to a CWA NPDES permit.

Disposal. The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid or hazardous waste on or in the land or water.

Disposal Prohibition. The LDR requirement that prohibits the land disposal of hazardous waste that has not been adequately treated to reduce the threat posed by such waste.

Distillation Bottoms. Residues that form at the bottom of a distillation unit.

Do-it-Yourselfers. Individuals who generate used oil through the maintenance of their own personal vehicles and equipment and are not considered used oil generators.

Drip Pads. Engineering structures consisting of a curbed, free-draining base, constructed of non-earthen materials, and designed to convey wood preservative chemical drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.

Elementary Neutralization Units. Containers, tanks, tank systems, transportation vehicles, or vessels which neutralize wastes that are hazardous only for exhibiting the characteristic of corrosivity.

Emergency Planning and Community Right-to-Know Act. The Act designed to help communities prepare to respond in the event of a chemical emergency and to increase the public's knowledge of the presence and threat of hazardous chemicals.

Environmental Justice. The fair distribution of environmental risks across socioeconomic and racial groups.

Environmental Media. Materials such as soil, surface water, ground water, and sediment.

EPA Identification Number. A unique number assigned by EPA to each hazardous waste generator, transporter, or treatment, storage, and disposal facility.

Episodic Generation. The situation in which a generator's status changes from one month to the next, as determined by the amount of waste generated in a particular month. If a generator's status does in fact change, the generator is required to comply with the respective regulatory requirements for that class of generators for the waste generated in that particular month.

Equipment. Each valve, pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, or flange or other connector, and any other control devices or systems.

Exception Report. A report, submitted by LQGs and SQGs, detailing efforts to locate wastes when a signed copy of the manifest has not been received.

Federal Insecticide, Fungicide, and Rodenticide Act. The Act that provides procedures for the registration of pesticide products to control their introduction into the marketplace.

Federal Procurement Program. A program that sets minimum recycled content standards for certain designated items and requires procuring agencies to purchase those items composed of the highest percentage of recovered materials practicable.

Final Authorization. Authorization by EPA that indicates that a state's program is equivalent to, or no less stringent than, as well as consistent with, federal hazardous waste regulations.

Financial Assurance. Under RCRA Subtitle C, the requirements designed to ensure that TSDF owners and operators will have the financial resources to pay for closure, post-closure, and liability costs. Under RCRA Subtitle D, the requirements designed to ensure that MSWLF owners and operators will have the financial resources to pay for closure, post-closure, and corrective action costs.

Financial Test. A test of self-insurance which demonstrates that an owner and operator has sufficient financial strength to satisfy the TSDF financial assurance requirement.

Float. The lighter materials present in petroleum refinery wastewater. As components of oily waste, float rises to the surface in the first step of wastewater treatment.

Fly Ash. Particles of ash, such as particulate matter which may also have metals attached them, that are carried up the stack of a combustion unit with gases during combustion.

Formal Administrative Action. An enforcement action that is taken when a serious violation is detected, or when the owner and operator does not respond to an informal administrative action.

Freedom of Information Act. The Act that grants private parties the right to obtain information in the government's possession. FOIA requires each federal agency to establish procedures for handling requests regarding government statutes, regulations, standards, permit conditions, requirements, orders, and policies.

Generator. Any person, by site, whose act first creates or produces a hazardous waste, used oil, or medical waste, or first brings such materials into RCRA regulation.

Ground Water Monitoring. Sampling and analysis of ground water for the purpose of detecting the release of contamination from a solid or hazardous waste land-based unit.

Hammer Provisions. Requirements written directly into RCRA by Congress, as in the case of the Hazardous and Solid Waste Amendments of 1984, that would automatically become regulations if EPA failed to issue its own regulations by certain dates.

Hazard Communication Standard. The OSHA standard that provides workers with access to information about the hazards and identities of the chemicals they are exposed to while working, as well as the measures they can take to protect themselves.

Hazard Ranking System. A model devised under CERCLA that determines the relative risk to public health and the environment posed by hazardous substances in ground water, surface water, air, and soil. Only those sites with a score of 28.5 (on a scale of 0 to 100) are eligible for placement on the NPL.

Hazardous Constituents. For purposes of RCRA TSD ground water monitoring, those constituents that have been detected in the uppermost aquifer and are reasonably expected to be in or derived from the waste contained in the unit.

Hazardous Substance. A comprehensive designation under CERCLA for RCRA hazardous wastes as well as other toxic pollutants regulated by CAA, CWA, and TSCA. EPA has the authority under CERCLA to designate any additional element, compound, mixture, or solution as a hazardous substance. The definition of hazardous substance specifically excludes petroleum and natural gas.

Hazardous Waste. A waste with properties that make it dangerous, or capable of having a harmful effect on human health and the environment. Under the RCRA program, hazardous wastes are specifically defined as wastes that meet a particular listing description or that exhibit a characteristic of hazardous waste.

Hazardous Waste Operations and Emergency Response Worker Protection Standard. The OSHA standard that protects the health and safety of workers engaged in operations at hazardous waste sites, hazardous waste treatment facilities, and emergency response locations.

Ignitability characteristic. The characteristic which identifies wastes that can readily catch fire and sustain combustion.

Incinerator. An enclosed device that uses controlled flame combustion and does not meet the criteria for classification as a boiler, industrial furnace, sludge dryer (a unit that dehydrates hazardous sludge), or carbon regeneration unit (a unit that regenerates spent activated carbon). Incinerators also include infrared incinerators (units that use electric heat followed by a controlled flame afterburner) and plasma arc incinerators (units that use electrical discharge followed by a controlled flame afterburner).

Incorporation by Reference. This occurs when the regulatory language in a state's regulation actually cite, or refer to, the federal regulations.

Indirect Discharges. Wastewater that is first sent to a POTW, and then after treatment by the POTW, discharged pursuant to a NPDES permit.

Industrial Furnace. An enclosed unit that is an integral part of a manufacturing process and uses thermal treatment to recover materials or energy from hazardous waste.

Informal Administrative Action. Any communication from EPA or a state agency that notifies the handler of a problem.

Inherently Waste-Like. For purposes of defining a material as a solid waste under RCRA Subtitle C, a material, such as dioxin-containing wastes, that is always considered a solid waste because of its intrinsic threat to human health and the environment.

Insurance. A policy to cover the TSDf financial assurance requirement.

Interim Authorization A temporary mechanism that is intended to promote continued state participation in hazardous waste management while encouraging states to develop programs that are fully equivalent to the federal program and will qualify for final authorization.

Interim Measures. Under RCRA Subtitle C corrective action, short-term actions to control ongoing risks while site characterization is underway or before a final remedy is selected.

Interim Status Facilities. TSDfS that were already in operation when the RCRA standards were established and that are operating under less stringent standards until they receive a permit.

Lab Packs. Drums filled with many small containers packed in nonbiodegradable absorbent materials.

Land Disposal. For purposes of RCRA Subtitle C regulation, placement in or on the land, except in a corrective action unit of hazardous waste, and includes, but is not limited to, placement in a landfill, surface impoundment,

waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, underground mine or cave, or placement in a concrete vault, or bunker intended for disposal purposes.

Land Treatment. Units Also known as land farms, land treatment units involve the application of hazardous waste on the soil surface, or the incorporation of waste into the upper layers of the soil in order to degrade, transform, or immobilize hazardous constituents present in hazardous waste.

Landfill. For purposes of RCRA Subtitle C, a disposal unit where nonliquid hazardous waste is placed in or on the land.

Large Quantity Generators. Facilities that generate more than 1,000 kg of hazardous waste per calendar month, or more than 1 kg of acutely hazardous waste per calendar month.

Large Quantity Handlers of Universal Waste. Handlers that accumulate a total of 5000 kg or more of universal waste at any one time.

Leachate. Any liquid, including any suspended components in the liquid, that has percolated through or drained from waste.

Letter of Credit. A credit document issued to an owner and operator to cover the TSD financial assurance requirement.

Liabilities. Damages that may result from an unexpected release of contaminants into the environment.

Lightweight Aggregate Kiln. Type of industrial furnace that produces lightweight aggregate and burns liquid hazardous waste as fuel to run its process. Lightweight aggregate refers to a wide variety of raw materials (such as clay, shale, or slate) which, after thermal processing, can be combined with cement to form concrete products. Lightweight aggregate is produced either for structural or thermal insulation purposes.

Listed Wastes. Wastes that are considered hazardous under RCRA because they meet specific listing descriptions.

Manifest. Paperwork that accompanies hazardous waste from the point of generation to the point of ultimate treatment, storage, or disposal. Each party involved in the waste's management retains a copy of the RCRA manifest, which contains specific information about the waste.

Marine Protection, Research, and Sanctuaries Act. This Act requires a permit for any material that is transported from a US port or by a US vessel for disposition at sea. Marketers Used oil handlers who either 1) direct

shipments of used oil to be burned as fuel in regulated devices, or 2) claim that used oil to be burned for energy recovery is on-specification.

Maximum Achievable Control Technology Process. Technology-based concentration limits developed under CAA to limit emissions of individual constituents from hazardous waste combustion units.

Maximum Contaminant Levels. For purposes of RCRA ground water monitoring, contaminant-specific levels borrowed from SDWA that are the maximum levels of hazardous waste or hazardous constituents allowed to be present in the groundwater.

Medical Waste. Culture and stocks of infectious agents, human pathological wastes, human blood and blood products, used sharps, certain animal wastes, certain isolation wastes, and unused sharps.

Memorandum of Agreement. An agreement between a state's director and its EPA Regional Administrator outlining the nature of the responsibilities to enforce a regulatory program and defining the level of coordination and oversight between EPA and the state agency.

Military Munitions. For purposes of defining a material as a solid waste under RCRA Subtitle C, ammunition products and components produced for or used by the military for national defense and security.

Miscellaneous Units. Hazardous waste treatment, storage, or disposal units regulated under RCRA that do not meet any of the other definitions of regulated units.

Mixed Waste. Radioactive waste that is also a hazardous waste under RCRA. Such wastes are jointly regulated by RCRA and Atomic Energy Act.

Mixture Rule. A rule that is intended to ensure the regulation of mixtures of listed wastes with nonhazardous solid wastes.

Municipal Solid Waste. Durable goods (e.g., appliances, tires, batteries), nondurable goods (e.g., newspapers, books, magazines), containers and packaging, food wastes, yard trimmings, and miscellaneous organic wastes from residential, commercial, and industrial nonprocess sources.

Municipal Solid Waste Landfill. A discrete area of land or excavation that receives municipal solid waste.

National Ambient Air Quality Standards. Regulations promulgated by EPA under the Clean Air Act for six criteria pollutants — sulfur dioxide, particulate matter, nitrogen dioxide, carbon monoxide, ozone, and lead — in order to protect the public from toxic emissions to the atmosphere.

National Corrective Action Prioritization System. A resource management tool by which EPA sets priorities for the Subtitle C corrective action program.

National Emission Standards for Hazardous Air Pollutants. Standards set by EPA under the Clean Air Act to control emissions from specific industrial sources.

National Oil and Hazardous Substances Pollution Contingency Plan. The NCP contains the regulations that implement the CERCLA response process. The NCP also provides information about the roles and responsibilities of EPA, other federal agencies, states, and private parties regarding releases of hazardous substances.

National Priorities List. EPA's priority hazardous substance sites for cleanup. EPA only funds remedial actions at hazardous waste sites on the NPL.

Nonsudden Accidental Occurrences. For purposes of TSDf financial assurance, events that take place over time and involve continuous or repeated exposure to hazardous waste.

Notice of Deficiency. A notice requiring that a TSDf permit applicant supply more information for a complete permit application.

Notice of Intent to Deny. A notice issued by a permitting agency which tells a TSDf permit applicant that the application does not demonstrate compliance with the RCRA standards.

Notice of Noncompliance. An informal letter to a handler written as part of an informal administrative action.

Notice of Violation. An informal letter to a handler written as part of an informal administrative action.

Occupational Safety and Health Act. The Act that is designed to save lives, prevent injuries, and protect the health of employees in the workplace. OSHA accomplishes these goals through several regulatory requirements including the HCS and HAZWOPER standards.

OECD Council Decision. A multilateral agreement by the Organization for Economic Cooperation and Development that establishes procedural and substantive controls for the import and export of recyclables between member nations. Because the United States is a member of the OECD, US businesses can trade recyclables with other member nations.

Off-Specification Used Oil. Used oil that is tested and does not meet given parameters for arsenic, cadmium, chromium, flash point, lead, and total halogens.

Omnibus Provision. The authority which allows EPA to add conditions to a TSDF permit that are not specifically addressed by the RCRA regulations.

On-Specification Used Oil. Used oil that meets all the given parameters for arsenic, cadmium, chromium, flash point, lead, and total halogens.

Open Dumps. Solid waste disposal facilities that fail to comply with the Subtitle D criteria.

Operating Requirements. Parameters established by a facility and written into a permit that will ensure a combustion unit meets numerical performance standards.

Operation and Maintenance. The operation and maintenance phase of the CERCLA response process. Operation and maintenance may include activities such as ground water pump and treat, and cap maintenance. EPA conducts review of operation and maintenance activities to ensure that the remedy selected is still protective of human health and the environment.

Overfiling. When a state fails to enforce its hazardous waste program properly, EPA can overfile, or enforce a provision for which a particular state has authorization.

Particulate Matter. Small dust-like particles emitted from hazardous waste combustion units.

Payment Bond. For purposes of TSDF financial assurance, a type of surety bond that will fund a standby trust fund in the amount equal to the value of the bond.

Performance Bond. For purposes of TSDF financial assurance, a type of surety bond that guarantees that an owner and operator will comply with their closure, post-closure, and liability requirements.

Performance Standards. The numerical pollutant emission limits for hazardous waste combustion units developed by EPA.

Permit-as-a-Shield. The provision which ensures that TSDF permittees will not be enforced against for violating new requirements that were not established in the original permit. Permit-by-Rule A special form of a RCRA permit that is sometimes granted to facilities with permits for activities under other environmental laws.

Permitted Facilities. Facilities that have obtained a TSDF permit from EPA or the state agency to engage in the treatment, storage, or disposal of hazardous waste.

Petroleum Brownfields. Abandoned or underutilized industrial and commercial properties where redevelopment is complicated by real or perceived environmental petroleum contamination.

Point of Compliance. For purposes of RCRA TSDF ground water monitoring, the vertical point where a TSDF owner and operator must monitor the uppermost aquifer to determine if the leak exceeds the ground water protection standard.

Point Source Discharges. Discharges of treated wastewater directly into a lake, river, stream, or other water body. Point source discharges are regulated under CWA.

Pollutants or Contaminants. Any element, substance, compound, or mixture that, after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, will or may reasonably be anticipated to cause illness, death, or deformation in any organism. The definition of pollutant or contaminant specifically excludes petroleum and natural gas.

Post-Closure. Period after closure during which owners and operators of solid or hazardous waste disposal units conduct monitoring and maintenance activities in order to preserve the integrity of the disposal system.

Potentially Responsible Party. The person or persons who may be held liable for hazardous substance contamination under CERCLA. PRPs may include the owners and operators, generators, transporters, and disposers of the hazardous substances.

Precious Metals Reclamation. The recycling and recovery of precious metals (i.e., gold, silver, platinum, palladium, iridium, osmium, rhodium, and ruthenium) from hazardous waste.

Preliminary Assessment. A review of all readily available site information such as maps, deeds, and other records to determine if further CERCLA response action is necessary. During the PA, EPA tries to determine what type of substances may have been released and the potential impacts to human health and the environment.

Principal Organic Hazardous Constituents. Selected organic constituents, which are high in concentration and difficult to burn, that are monitored to

ensure a hazardous waste combustion unit's destruction and removal efficiency.

Process Vent. Any open-ended pipe or stack that is vented to the atmosphere either directly, through a vacuum-producing system, or through a tank associated with hazardous waste distillation, fractionation, thin-film evaporation solvent extraction, or air or steam stripping operations.

Processors and Rerefiners. Facilities that process used oil so that it can be burned for energy recovery or reused.

Procuring Agency. Agencies that purchase \$10,000 or more worth of an item designated under the federal procurement program during the course of a fiscal year. Procuring agencies include: federal government departments or agencies; state government agencies that use appropriated federal funds for procurement of a designated item; local government agencies that use appropriated federal funds for procurement of a designated item, and government contractors that work on a project funded by appropriated federal funds with respect to work performed under the contract.

Publicly Owned Treatment Works. A municipal wastewater treatment plant that receives domestic sewage from households, office buildings, factories, and other places where people live and work. Treatment at a POTW is regulated by the CWA.

RCRAInfo. A database that tracks RCRA Subtitle C facility-specific data (i.e., events and activities related to hazardous waste generators, transporters, and TSDFs), and hazardous waste activity reports, known as biennial reports, that are submitted by LQGs and TSDFs.

Reactivity Characteristic. The characteristic which identifies wastes that readily explode or undergo violent reactions.

Rebuttable Presumption. For purposes of RCRA, an objective test that focuses on the halogen level in used oil to determine whether the used oil has been mixed with a listed hazardous waste.

Reclaimed. For purposes of defining a material as a solid waste under RCRA Subtitle C, a material is reclaimed if it is processed to recover a usable product, or regenerated by processing it in a way that restores it to usable condition.

Record of Decision. A remedial action plan document that describes the remedy selected for a Superfund site.

Recovered Materials Advisory Notice. A notice that provides suggested recycled content levels and other purchasing information for each item designated in the CPG. Procuring agencies can use these levels as guidelines, but are encouraged to exceed EPA's recommendations.

Recovered Materials Content Levels. The minimum amount of recovered material that designated items under the federal procurement program should contain. Recycled For purposes of defining a material as a solid waste under RCRA Subtitle C, a material is recycled if it is used or reused, or reclaimed.

Recycling. The separation and collection of wastes, their subsequent transformation or remanufacture into usable or marketable products or materials, and the purchase of products made from recyclable materials.

Recycling Presumption. The assumption that all used oil that is generated will be recycled.

Regulated Community. The group of organizations, people, industries, businesses, and agencies that, because they perform certain activities, fall under the purview of RCRA.

Regulations. Rules issued by an agency, such as EPA, that translate the general mandate of a statute into a set of requirements that the regulated community and the agency must work within.

Remedial Action. Longer-term CERCLA response actions that ultimately represent the final remedy for a site and generally are more expensive and of a longer duration than removals.

Remedial Action Plans. Special form of RCRA permit that a facility may obtain to treat, store, or dispose of hazardous remediation waste at a remediation waste management site.

Remedial Design/Remedial Action. Remedial design is a phase in the CERCLA response process in which technical drawings are developed for the chosen remedy, costs for implementing the remedy are estimated, and roles and responsibilities of EPA, states and contractors are determined. During the remedial action phase, the remedy is implemented generally by a contractor, with oversight and inspection conducted by EPA or the state (or both).

Remedial Investigation/Feasibility Study. A remedial investigation is a phase in the CERCLA response process that entails an in-depth examination of the nature and extent of contamination at a site and the associated risks to human health and the environment. The feasibility study

entails an analysis of remedial action alternatives comparing the advantages and disadvantages of each.

Remediation Waste. All solid and hazardous wastes, and all media (including ground water, surface water, soils, and sediments) and debris that are managed for implementing cleanup.

Removal Action. Short-term cleanup action taken under CERCLA that usually addresses problems only at the surface of a site. A removal is conducted in response to an emergency, and generally is limited to 12 months duration or \$2 million in expenditures.

Resource Conservation Challenge. A major national effort to find flexible, yet more protective ways to conserve our valuable natural resources through waste reduction and energy recovery. To achieve the goals of the RCC, EPA has formed voluntary partnership programs, including the National Waste Minimization Partnership Program, the Greenspace Alliance, Plug-In to eCycling, Product Stewardship Partnerships, WasteWise, the Coal Combustion Partnership Program, and America's Marketplace Recycles.

Rulemakings. Rules issued by an agency, such as EPA, that translate the general mandate of a statute into a set of requirements that the regulated community and the agency must work within.

Safe Drinking Water Act. The Act designed to protect the nation's drinking water supply by establishing national drinking water standards (MCLs or specific treatment techniques), and by regulating UIC wells.

Scrap Metal. Worn or extra bits and pieces of metal parts, such as scrap piping and wire, or worn metal items, such as scrap automobiles and radiators.

Secondary Materials. The five categories of solid wastes regulated under Subtitle C, which include: spent materials, by-products, sludges, commercial chemical products, and scrap metal.

Sham Recycling. Illegitimate activities executed under the guise of recycling in order to be exempt from or subject to lesser regulation.

Site Inspection. An in-depth assessment of on-site conditions, conducted as part of the CERCLA response process, to rank the site's hazard potential by determining the site's hazard ranking system score. Activities to assess the site may include sampling, field reconnaissance, and examination of site records (e.g., topographical maps, logs).

Sludges. Any solid, semisolid, or liquid wastes generated from a wastewater treatment plant, water supply treatment plant, or air pollution control device.

Small Quantity Generators. Facilities that generate between 100 kg and 1,000 kg of hazardous waste per calendar month.

Small Quantity Handlers of Universal Waste. Handlers that do not accumulate 5000 kg of all universal waste categories combined at their location at any one time.

Sole Active Ingredient. For purposes of determining if a waste is P or U listed, the only chemical ingredient serving the function of a commercial product formulation.

Solid Waste. Any garbage, refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material, including solid, liquid, semisolid, or contained gaseous material, resulting from industrial, commercial, mining, and agricultural operations and from community activities. For the purposes of hazardous waste regulation, a solid waste is a material that is discarded by being either abandoned, inherently waste-like, a certain waste military munition, or recycled.

Solid Waste Management Units. For purposes of Subtitle C corrective action, discernible units where solid or hazardous wastes have been placed at any times, or any area where solid wastes have been routinely and systematically released.

Source Reduction. Maximizing or reducing the use of natural resources at the beginning of an industrial process, thereby eliminating the amount of waste produced by the process. Source reduction is EPA's preferred method of waste management.

Spent Materials. Materials that have been used and can no longer serve the purpose for which they were produced without processing.

Spill Prevention Control and Countermeasures. Regulations establishing spill prevention procedures and equipment requirements for nontransportation related facilities with certain aboveground or underground storage capacities that could reasonably be expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines.

Staging Pile. An accumulation of solid, non-flowing remediation waste that is not a containment building and that is used only during remedial operations for temporary storage at a facility.

State Authorization Tracking System. A tool used by EPA to chart those states that have been authorized to implement the RCRA hazardous waste program.

Storage. Holding hazardous waste for a temporary period, after which the hazardous waste is treated, disposed of, or stored elsewhere.

Storage Prohibition. LDR provision that prevents the indefinite storage of untreated hazardous waste for reasons other than the accumulation of quantities necessary for effective treatment or disposal.

Sudden Accidental Occurrences. For purposes of TSDF financial assurance, events that are not continuous or repeated.

Superfund. The common name for CERCLA. Superfund refers to the entire CERCLA program as well as the trust fund established to fund cleanup of contaminated sites where potentially responsible parties cannot be identified, or are unwilling or unable to pay.

Superfund Amendments and Reauthorization Act. SARA, enacted in 1986, reauthorized and amended CERCLA to include additional enforcement authorities, technical requirements, community involvement requirements, and various clarifications. SARA Title III authorized EPCRA.

Supplemental Environmental Projects. Environmentally beneficial projects which a defendant or respondent agrees to undertake in the settlement of a civil or administrative enforcement action, but which the defendant is not otherwise legally required to perform.

Surety Bond. A guarantee which certifies that a surety company will cover the TSDF financial assurance requirement on behalf of the owner and operator.

Surface Impoundment. A natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials that is used to treat, store, or dispose of hazardous waste.

Tanks. Stationary devices used to store or treat hazardous waste.

Technical Grade. For purposes of determining if a waste is P or U listed, a commercial chemical product that is not 100 percent pure, but is of a grade of purity that is either marketed or recognized in general usage by the chemical industry.

Temporary Units. Containers or tanks that are designed to manage remediation wastes during corrective action at permitted or interim status facilities.

Thermal Treatment. The treatment of hazardous waste in a device that uses elevated temperatures as the primary means to change the chemical, physical, or biological character or composition of the waste.

Totally Enclosed Treatment Units. Units that are designed and constructed to practically eliminate the potential for hazardous wastes to escape into the environment during treatment.

Toxic Substances Control Act. The Act that controls the manufacture and sale of certain chemical substances.

Toxicity Characteristic. The characteristic which identifies wastes that are likely to leach dangerous concentrations of toxic chemicals into ground water.

Toxicity Characteristic Leaching Procedure. A lab procedure designed to predict whether a particular waste is likely to leach chemicals into ground water at dangerous levels.

Transfer Facilities. Any transportation-related facility such as loading docks, parking areas, storage areas, or other similar areas where shipments of hazardous waste, used oil, or universal waste are held temporarily during the normal course of transportation.

Transporter. Any person engaged in the off-site transportation of hazardous waste, used oil, universal waste, or medical waste.

Treatment. Any method, technique, or process designed to physically, chemically, or biologically change the nature of a hazardous waste.

Treatment Standards. LDR criteria that hazardous waste must meet before it is disposed.

Treatment, Storage, and Disposal Facilities. Facilities engaged in the treatment, storage, or disposal of hazardous waste. These facilities are the last link in the cradle-to-grave hazardous waste management system.

Trial Burn. Burn conducted to test the performance of a hazardous waste combustion unit over a range of conditions.

Trust Fund. A financial mechanism by which a facility can set aside money in order to cover the TSDf financial assurance requirement.

Underground Injection Control Well. Units into which hazardous waste is permanently disposed of by injection 1/4 mile below an aquifer with an underground source of drinking water (as defined under SDWA).

Underground Storage Tanks. A tank and any underground piping connected to the tank that is used to contain an accumulation of regulated substances and that has at least 10 percent of its combined volume underground.

Underlying Hazardous Constituents. Constituents that must be treated in order to meet contaminant-specific levels for purposes of the LDR program.

Universal Treatment Standards. Contaminant-specific hazardous waste LDR treatment levels.

Universal Wastes. Commonly recycled wastes with special management provisions intended to facilitate recycling. There are four categories of universal wastes: hazardous waste batteries, hazardous waste pesticides that have been recalled or collected in waste pesticide collection programs, hazardous waste lamps, and hazardous waste thermostats.

Use Constituting Disposal. The direct placement of wastes or waste-derived products (e.g., asphalt with petroleum refining wastes as an ingredient) on the land.

Used Oil. Any oil that has been refined from crude or synthetic oil that has been used and, as a result of such use, is contaminated by physical or chemical impurities.

Violation. The act or an instance of breaking or disregarding the law.

Waste Analysis Plan. A plan that outlines the procedures necessary to ensure proper treatment, storage, or disposal of hazardous waste.

Waste Minimization. The reduction, to the extent feasible, in the amount of hazardous waste generated prior to any treatment, storage, or disposal of the waste. Because waste minimization efforts eliminate waste before it is generated, disposal costs may be reduced, and the impact on the environment may be lessened.

Waste Pile. An open pile used for treating or storing nonliquid hazardous waste.

Wastewater Treatment Units. Tanks or tank systems that treat hazardous wastewaters and discharge them pursuant to CWA.

Zero Discharges. Wastewater that is not directly or indirectly discharged to a navigable water (e.g., wastewater that is land disposed through spray irrigation) under CWA. Zero discharge facilities are subject to federal or

state regulatory limitations that are as strict as those that apply to direct and indirect dischargers under CWA.

Appendix 10: List of Common Abbreviations

The following is a list of abbreviations used at Norman Wei's Federal/California Environmental Regulations seminars:

ACM	Asbestos Containing Material
AO	Administrative Order
BACT	Best Available Control Technology
BMP	Best Management Practice
CAAA	Clean Air Act Amendments of 1990
CAL ARP	California Accidental Release Prevention Program
CERCLA	Comprehensive Environmental Response Compensation and Liability Act (also know as Superfund)
CERCLIS	Comprehensive Environmental Response Compensation and Liability Information System
CESQG	Conditionally Exempt Small Quantity Generator of hazardous wastes
CFC	Chlorofluorohydrocarbon
CFR	Code of Federal Regulations
CWA	Clean Water Act (also known as Water Pollution Control Act)
DMR	Discharge Monitoring Report (required under NPDES)
DOJ	Department of Justice
DOT	Department of Transportation
EHS	Extremely Hazardous Substance
EMS	Environmental Management System
EPA	Environmental Protection Agency
EPA ID	EPA Identification Number for hazardous waste generator
EPCRA	Emergency Planning and Community Right to Know Act (also known as SARA Title III)
FBI	Federal Bureau of Investigation
HAP	Hazardous Air Pollutant
HRS	Hazard Ranking System under Superfund
LEPC	Local Emergency Planning Committee
LQG	Large Quantity Generator of hazardous wastes
MACT	Maximum Achievable Control Technology (required under NESHAP)
MMS	Minerals Management Service (under the Department of the Interior)
MSDS	Material Safety and Data Sheet
NAAQS	National Ambient Air Quality Standards

NCP	National Contingency Plan under CERCLA
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NPDES	National Pollutants Discharge Elimination System (under the Clean Water Act)
NPL	National Priority List (list of Superfund sites)
NRC	National Response Center operated by the Coast Guard
O&M	Operation and Maintenance
OSHA	Occupational Safety and Health Administration
PCBs	polychlorinated biphenyls
PL92-500	Public Law 92-500 (also known as the Clean Water Act)
PM 2.5	Particulate Matters having a diameter of less than 2.5 microns
PM10	Particulate Matters having a diameter of less than 10 microns
POTW	Publicly Owned Treatment Works
PPE	Personal Protection Equipment
Prop 65	Proposition 65 in California
PRP	Potentially Responsible Party under the Superfund law
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action under CERCLA
RI/FS	Remedial Investigation/Feasibility Studies
RMP	Risk Management Plan under the Clean Air Act
RQ	Reportable Quantity
SAA	Satellite Accumulation Area for hazardous wastes
SARA	Superfund Amendment and Reauthorization Act
SERC	State Emergency Response Commission
SI	Site Investigation for Superfund
SIP	State Implementation Plan (under the Clean Air Act)
SPCC	Spill Prevention Control and Countermeasures Plan (under the Clean Water Act)
SQG	Small Quantity Generator of hazardous wastes
SWPPP	Storm Water Pollution Prevention Plan (under the Clean Water Act)
TCLP	Toxic Characteristics Leaching Procedures
TMDL	Total Maximum Daily Load
TPQ	Threshold Planning Quantity
TQ	Threshold Quantity
TRI	Toxic Release Inventory (also know as Form R) under EPCRA
TSCA	Toxic Substances Control Act
TSDF	Treatment, Storage and Disposal Facility (under RCRA)

UST	Underground Storage Tank
VOC	Volatile Organic Compound
WLA	Waste Load Allocation (under the Clean Water Act)
WQS	Water Quality Standards (under the Clean Water Act)
WWTP	Wastewater Treatment Plant

Addition Resources

Here are some additional resources:

“Environmental Audits” 7th Edition. By Lawrence B. Cahill. Larry is one of the foremost experts on environmental auditing.

“Precision - a New Approach to Communication” by Michael McMaster and John Grinder. This book provides numerous real life examples on how to obtain high quality information in a business setting. It is amazing how much high quality information you can get just by asking the right questions.

“Moving Mountains - the Art of Letting Others See things Your Way.” by Henry Boettinger. This book discusses the basic fundamentals of presenting ideas to an audience.

“Beyond Bullet Points” by Cliff Atkinson. Cliff is one of the foremost authorities on how to simplify your PowerPoint presentations and avoid using those awful bullet points.

“Presentations That Work - How to Make Great PowerPoint Presentations” by Norman Wei.

“It is All About Them - why some consultants are more effective than others” by Norman Wei. This book discusses the traits that make an excellent consultant.

Norman’s Environmental Blogs. Available for free at www.normanswei.wordpress.com.

Norman’s bog on how to make excellent presentations at www.nobullets.wordpress.com.

About the Author

Norman S. Wei is the principal and founder of Environmental Management and Training, LLC. He has over 40 years of experience as a corporate environmental manager in the manufacturing industry and as a consultant. From 1989 to 1998, he was the senior corporate environmental manager at Star-Kist Foods - a wholly owned subsidiary of the H.J. Heinz Company – where he was responsible for environmental compliance programs at 15 facilities worldwide. He played a key management role in successfully resolving a citizen lawsuit and in negotiating numerous consent agreements with EPA and state regulatory agencies.



During his tenure at Star-Kist Foods, he negotiated a Consent Decree with the EPA and local authorities to construct a mile-long wastewater treatment plant outfall in American Samoa which resulted in significantly improved water quality in the Pago Pago Harbor. The project was completed ahead of schedule and under budget.

He has an in-depth working knowledge of all the major environmental laws and regulations such as the Clean Water Act, the Clean Air Act Amendments, the Resource Conservation and Recovery Act, the Superfund Law, SARA Title III, and OSHA. Throughout his career, Norman has worked regularly with corporate attorneys and outside counsel on numerous environmental issues.

Norman Wei's consulting experience included assignments with several major environmental consulting firms in Canada, Saudi Arabia, California and New Mexico. In the 1970s, Norman was on the environmental staff of the U.S.-Canada International Joint Commission - a quasi-judicial body responsible for cleaning up the Great Lakes.

He has extensive experience in conducting environmental compliance seminars for corporate executives, plant managers, supervisors and production staff. Over 3,000 environmental professionals throughout the country have attended his seminars.

Norman Wei served on the editorial advisory board of *Business and Legal Reports* and was a contributing editor for the *Pollution Engineering Magazine* where he wrote a “practical management” column every two months. He has also contributed many environmental compliance articles to *Business and Legal Reports*. He currently serves on the Editorial Board of the Environmental Claims Journal.

Norman writes an environmental blog at <http://normanswei.wordpress.com>. This is where readers can obtain the latest up-to-date information on environmental news and compliance guidance.

This book reflects his 40 plus years of practical experience as a corporate environmental manager and consultant.

Norman holds a Master’s Degree in Environmental/Civil Engineering and a Bachelor’s Degree in Electrical Engineering from the University of Toronto.

He lives in Cape Coral, Florida. He is an avid scuba diver and his hobbies include both aerial and underwater photography.

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