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Environmental contracting: a case study

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THESIS

ENVIRONMENTAL CONTRACTING:
A CASE STUDY

by

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June 1994

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This Thesis investigates the process of contracting for environmental services, namely the removal and disposal of hazardous waste from a Navy shore installation. The Thesis chronicles a case study and analysis of a contract involving Naval Air Station, Alameda, California with contracting services provided by the Public Works Center, San Francisco Bay in Oakland, California. The Thesis addresses pertinent historical background and current issues faced in contracting for environmental services. The study reveals that legislative requirements are numerous and confusing while the majority of requirements encountered are fairly straightforward in nature. The risks involved are far reaching but guidance is clear. The majority of personnel involved are diligent and professional but few are unscrupulous. The study concludes that the best compliance efforts are performed by the participants and not regulatory agencies. Only when the participants are derelict does the system fail. This Thesis is intended to serve as an introduction to environmental contracting for the purpose of provoking more indepth discussion of the issues.

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Environmental Contracting:
A Case Study

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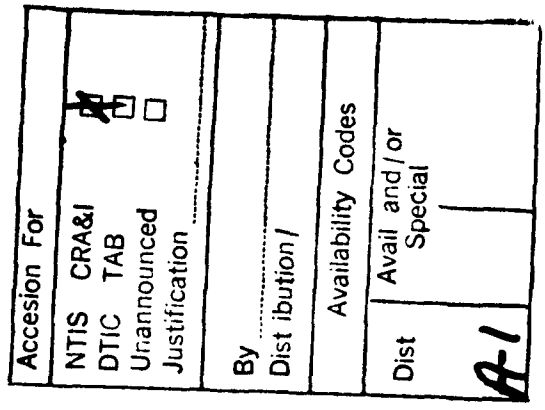

ABSTRACT

This Thesis investigates the process of contracting for environmental services, namely the removal and disposal of hazardous waste from a Navy shore installation. The Thesis chronicles a case study and analysis of a contract involving Naval Air Station, Alameda, California with contracting services provided by the Public Works Center, San Francisco Bay in Oakland, California. The Thesis addresses pertinent historical background and current issues faced in contracting for environmental services. The study reveals that legislative requirements are numerous and confusing while the majority of requirements encountered are fairly straightforward in nature. The risks involved are far reaching but guidance is clear. The majority of personnel involved are diligent and professional but few are unscrupulous. The study concludes that the best compliance efforts are performed by the participants and not regulatory agencies. Only when the participants are derelict does the system fail. This Thesis is intended to serve as an introduction to environmental contracting for the purpose of provoking more indepth discussion of the issues.

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I. INTRODUCTION

A. BACKGROUND

Public consciousness of environmental issues began to take root in the early 1970's. A veritable plethora of legislation was enacted and many of these statutes have since been amended several times. The Clean Air Act [Ref. 1] and the Clean Water Act [Ref. 2] did much to heighten awareness but were limited in their scope. They required industry to remove hazardous material from any emissions into the atmosphere or discharges into water systems. Early on, the military chose not to assume any responsibility for compliance with these statutes by choosing to ignore them. The Resource Conservation and Recovery Act of 1976 [Ref. 3] and the Hazardous and Solid Waste Amendments of 1984 [Ref. 4] provided the impetus for cradle-to-grave accountability of hazardous materials by industry and Government alike. But it has not been until the last five years that the military has "come onboard" the program and initiated truly proactive programs to protect the environment.

The Department of Defense (DoD) currently generates in the vicinity of 500,000 tons of hazardous waste each year [Ref. 5:p. 8]. DoD, through the Base Closure and Realignment (BRAC) process, is closing more and more bases each year. The Congressional Budget Office estimates that the cost of cleaning up these Federal areas from years of neglect as well as getting and staying compliant with current

legislation will reach the $150 billion mark over the next three decades [Ref. 6:p. ix]. The General Accounting Office (GAO) puts this figure at $200 billion by the turn of the century [Ref. 5:p. 4]. DoD places their figure in the $40 billion range over the next two decades [Ref. 7:p. 2]. Though many of these dollars are provided through the BRAC process, it serves to reduce discretionary spending on the whole thus reducing DoD's operational budget. DoD has begun to trace much of this waste back to the acquisition process [Ref. 8:p. 1-4]. Systems have been designed with little recognition of the environmental impacts over their life cycles. The National Environmental Policy Act (NEPA) [Ref. 9] has taken a proactive step in addressing the concerns of the public over long term effects of acquisition decisions. DoD has addressed the problem in two major ways. It is actively seeking to reduce the amount of hazardous materials used in operations through limiting their use and attempting to substitute non-hazardous for hazardous materials in the design of systems and bases and in regular operations and maintenance. Secondly, significant effort has been expended in managing hazardous materials. Public demands and Environmental Protection Agency (EPA)/state enforcement have necessitated strong support among military commanders. Most notably, good hazardous material management programs have two things in common: strong command support and effective contracts for appropriate systems design, management, and disposal.

DoD has a strong mandate to control hazardous material and a significant effort is at hand to procure hazardous materials efficiently, manage them, and dispose of them properly. Environmental service contracts are a vehicle to help accomplish effective hazardous waste management and prevent costly environmental cleanup in the future. These service contracts, ranging from simplified purchase procedures to multi-million dollar contracts, are consuming more and more of the Operation and Maintenance (O&M) budget. Contracting personnel need to be aware of the requirements imposed on environmental contracts as well as the dynamics involved in working with the base engineering personnel who actually generate the clean-up requirements.

B. METHODS

Contracting personnel must be well versed in the pertinent laws, regulations, dynamics, and nuances related to environmental contracting. This Thesis is a case study of an environmental contract, intended to enrich students' education in the environmental area. The scope of this Thesis will consist of identifying pertinent legislation and DoD/Navy directives applicable to environmental service contracts. The Thesis chronicles a case study of a hazardous material removal contract. Data collection and analysis is confined to a single contract with mention of alternatives presented for comparative discussion.

The specific methodology of this Thesis consists of:

a review of the current and historical published legislation, doctrine, DoD Instructions, and Navy Instructions to determine the guidance and institutional philosophy with regards to environmental protection and;

a study of an environmental service contract at the U.S. Naval Facilities Engineering Command's (NAVFAC) Environmental Contract Service at the Public Works Center, San Francisco Bay, Oakland, CA. The study includes a comprehensive contract review covering the entire procurement process including discussions with key personnel.

C. OBJECTIVES

This Thesis illustrates the regulations necessary to work in the environmental arena and chronicles a case study of an environmental contract for illustrative purposes. Specifically, this Thesis addresses:

What are the major obstacles to overcome in negotiating environmental service contracts?

What problems are encountered in administering environmental service contracts?

What are the laws, regulations, and directives currently controlling environmental service contracts?

What are the current major risk allocation issues affecting contracting efforts in environmental services contracts?

D. PRESUMPTIONS

It is presumed that users of this Thesis have little exposure to environmental contracting but have some working knowledge of the contracting process within DoD.

Though environmental compliance is regulated at the Federal level much of the oversight is delegated to the states. This Thesis chronicles a contract in the State of California using Federal regulation and Title XXII of the California Code of Regulations. It should be noted that regulations and standards may, and often do, vary widely in their scope and application from state to state.

The next chapter shall study the pertinent regulations associated with the environment.

II. LAWS, REGULATIONS, AND DIRECTIVES

In 1970 there were only 500 pages in the Code of Federal Regulations (CFR) regarding environmental protection. Today, there are over 13,000 pages of environmental regulations in the CFR implementing over 56 pieces of environmental legislation. [Ref. 10:p. I-1]

The EPA is tasked with ensuring compliance with these regulations at the Federal level. While a Federal agency cannot unilaterally impose fines or force compliance on other Federal agencies, most Government agencies have signed Inter-agency Agreements or Memoranda of Understanding to allow EPA to carry out its mandate and inspect installations for compliance. Also, most states have enacted environmental regulations that rival and often exceed Federal standards and guidelines in scope and complexity. Most courts have ruled that the Government can (but shouldn't) exercise sovereign immunity for environmental infractions at the state level. As a result, Congress has included waivers of sovereign immunity in subsequent legislation but the courts have frequ ıtly ruled that the waivers were not broad enough to permit effective enforcement against Federal agencies [Ref. 10:p. I-5]. Consequently, Congress has said that all Federal agencies must comply with Federal as well as State environmental regulations:

> The head of each Executive agency is responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to Federal Facilities and activities under the control of the agency. [Ref. 11]

Further exemplification can be seen in a 1989 memorandum from then Secretary of Defense Dick Cheney to his Service Secretaries in which he states:

> Federal facilities, including military bases, must meet environmental standards. Congress has repeatedly expressed a similar sentiment. As the largest Federal agency, the Department of Defense has a great responsibility to meet this challenge. It must be a command priority at all levels. We must demonstrate commitment with accountability for responding to the Nation's environmental agenda. I want every command to be an environmental standard by which Federal agencies are judged. [Ref. 10:p. I-5]

As stated earlier, a wide array of statutes and guidance exist regarding environmental compliance. Discussed next are the statutes having the most impact on DoD compliance programs.

A. THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969

Cited as 42 USC §§ 4321-4307. The National Environmental Policy Act (NEPA) was generally credited with being the country's first significant statement on an encompassing national environmental policy. It was the culmination of President Nixon's Executive Order 11472 of 29 May 1969 which established the Citizens' Advisory Committee on Environmental Quality and the Environmental Quality Council both of whom drafted NEPA. It required Federal agencies to incorporate appropriate consideration of environmental impacts in their decision making processes. Included in the guidance was consideration not just of direct damage but consideration of interference with human, plant, and animal life or ecosystems.

NEPA was designed not to require agencies to make decisions based on environmental concerns but to allow them to make more informed decisions. It did not

prohibit agencies from specific actions but it did require them to document decisions regarding environmental concerns. The vehicle used for this purpose was an Environmental Impact Statement (EIS). The EIS becomes a matter for public action and record prior to agency action.

Lastly, NEPA served to establish the Council on Environmental Quality which had a responsibility to the President for submission of an annual Environmental Quality Report.

Notwithstanding its legislative requirements, NEPA also proved that public will regarding environmental issues was going to be enforced and the courts were going to support the public's intentions.

B. THE SOLID WASTE DISPOSAL ACT OF 1965

Cited as 42 USC §§ 6901-6991. The Solid Waste Disposal Act (SWDA), as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), the Hazardous and Solid Waste Amendments of 1984 (HSWA, a.k.a. the 1984 RCRA Amendments) and various other statutes are now generally known as "RCRA".

In 1984, RCRA established the first comprehensive national strategy for the management of ongoing solid and hazardous waste operations [Ref. 12]. RCRA was the basis for environmental damage prevention and closed the gaps left in the Clean Air and Water Acts which only required industry to remove hazardous substances from air emissions and water discharges respectively [Ref. 13]. RCRA incorporated specific guidelines and responsibilities for all parties involved with

hazardous waste and established "cradle to grave" accountability for hazardous waste pertaining to generators, transporters, and disposers of hazardous waste. RCRA is the primary compliance document regarding hazardous waste management and policy in the United States.

RCRA set out to define hazardous waste and went so far as to classify waste for regulatory purposes. RCRA then set forth specific responsibilities for the parties involved in the disposal process. RCRA allowed for delegation of RCRA compliance oversight from the EPA to the state level but states must have first obtained EPA approval for their regulatory program before delegation may occur. Once approved, the state regulatory commission became responsible for all regulatory and compliance programs.

One of the more important functions of state departments is to issue hazardous waste permits. These include permits for storage[1], treatment, and/or disposal of hazardous waste. The permit process is critical to any installation's day-to-day operations since hazardous waste is found on virtually every DoD installation. Without proper permits, the installation would be paralyzed until compliance could be assured. The permit process is not just a formality. It is a source of great concern and effort on the installation's part to get properly certified. Public concern and scrutiny give the process its due attention and can often be the source of political whim. A tremendous

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[1]Storage facilities are those who are authorized to hold hazardous material in excess of ninety days. Generators or transporters may hold hazardous material for up to ninety days as cited in 40 CFR §262.

amount of public discussion is rendered over the permitting process which can be set forth to further non-related agenda items. For example, a sewage project at a military base in New Jersey was severely delayed because of public concern. It was later discovered that the real concern was not with the environment but with local sch zoning issues relating to the base.

SWDA provided for remedial action on contaminated groundwater only. RCRA, as amended, provided for corrective, remedial, and preventive actions under most circumstances involving past, current, and future operations. As such, installations must have a detailed contingency plan addressing contamination prevention or mitigation. This plan which was formerly a base operating instruction has become the basis for permits issued by states' environmental agencies and it is this plan which is often debated at public forums regarding the permitting of installations.

Once a permit to procure, store, and/or dispose of hazardous material is obtained, an installation is able to carry on operations within the confines of the charter (permit). RCRA bases much of its compliance efforts on the manifest[2] system. In the cradle-to-grave philosophy, the manifest acts as the true source of accountability and is the true source of many problems [Ref. 5:p. 2]. Generators of waste are required and responsible for the accuracy of each manifest and are required to report every two years the quantity and disposition of hazardous waste generated at that place. Many

[2]A manifest is a legal document attesting to shipment and receipt of hazardous material. It traces the materials' chain of custody.

generators rely on the transporter of waste to handle the paperwork regarding the manifest system [Ref. 1:p. 2]. This practice makes the generator vulnerable to abuses by the transporter and subjects the generator to increased liability since the generator is responsible for all hazardous material in perpetuity [Ref. 3:p. 400]. The state environmental agency will also conduct compliance inspections on a random basis in accordance with its regulations.

C. THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980

Cited as 42 USC §§ 9601-9675. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was authorized for an initial period of five years (FY 81-85). CERCLA was enacted to deal with present and future health and environmental hazards caused by past hazardous waste practices [Ref. 10:p. A-2]. CERCLA was concerned with the reporting and cleanup of sites contaminated with hazardous waste in addition to providing policy and direction, in consonance with the National Oil and Hazardous Substance Pollution Contingency Plan (NCP), regarding emergency spill response and their associated funding. CERCLA grew out of the NEPA initiatives undertaken earlier in the 1970's. It was enacted to affect both Government and non-Government entities in order to remediate contaminated areas and assign liability to responsible

parties[3]. Liability may include the costs of remediation and any other associated damages as both a penalty and a deterrent [Ref. 14:p. 870]. In cases where liability could not be assigned, no basis for responsibility existed, or responsible parties were unable to bear the full cost of remediation, a Hazardous Substance Response Trust Fund (Superfund) was established as a no-year appropriation to allow site cleanup to be effected.

The EPA has responsibility for carrying out the provisions of CERCLA. In this capacity, EPA is required to promulgate revisions to the NCP where the NCP establishes the hazardous site determination and remedial action processes [Ref. 10:p. A-2]. The NCP further defines participatory roles in various contingency situations including Federal agencies, State and local Government, and public and private interest groups. Responsible entities, under the auspices of EPA, conduct surveys of the contaminated areas (called Preliminary Assessments and Site Inspections) and compare results to a Hazardous Ranking System (HRS). Sites with a score of 28.5 or higher are placed on the National Priorities List (NPL). Once on the NPL, a site is subject to increased cleanup oversight. The cognizant entity is then forced to remediate the area. Investigation and remediation studies are conducted, courses of action are discussed with EPA, state and local authorities, and the site is eventually remediated.

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[3]The definition of responsible party includes owners, operators, previous owners, generators of hazardous material, handlers, and disposers.

Non-NPL sites go through essentially the same process with the exception of receiving the increased attention of the NPL.

In two increments, 1986 and 1990, CERCLA authorization was extended until 30 September 1994 under what is now called the Superfund Amendments and Reauthorization Act (SARA). This Act also provided for the Defense Environmental Restoration Program (DERP) which is codified under 10 USC §211. Though not a legal component of CERCLA, DERP must be carried out consistent with the provisions and intent of CERCLA. DoD is now carrying out a comprehensive restoration program most notably headed by the Army Corps of Engineers and the Naval Facilities Engineering Command.

Appendix A illustrates the breadth of Federal statutes regarding environmental concerns. Much of the language and intent contained in these statutes is often overlapped and woven into NEPA, RCRA, and CERCLA to ensure the strongest environmental policy is being carried out. The next chapter shall set forth the particulars of the case study.

III. CASE PRESENTATION

A. SITUATION

Naval Air Station (NAS) Alameda was closing one of its industrial waste treatment plants (IWTP) since its continued use was no longer necessary due to base size reduction. The building was enclosed but through age and lack of use it had become a roost for a large number of pigeons. In the course of daily life, the pigeons collectively came to generate a large amount of waste. Base engineering personnel cleaned up the waste and stored it in seven 55 gallon drums. Unsure of whether the waste was hazardous, they sent the drums to the base's storage facility to await disposition. Base engineering personnel contacted the Defense Reutilization and Marketing Office (DRMO) to receive disposal instructions.[4] DRMO personnel contended that the waste should be classified as organic or biological and be disposed of as such.[5] In May 1993, base engineers had the waste analyzed. The lab results indicated a level of Chromium III (Chrome) at 63.5 milligrams per liter (mg/l) which exceeded California and Federal safe limits of 5 mg/l. The waste could not be classified as non-hazardous.

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[4]DRMO currently has the responsibility to contract for the disposal of hazardous material regarding DoD activities. This aspect of disposal contracting is discussed in Section IV.

[5]Though not addressed as part of this Thesis, this type of waste (generally organic) is disposed of through an approved sewage treatment system.

Once the lab results were verified, the base engineers had to dispose of the material. The reluctance of DRMO coupled with the need to expediently dispose of the material prompted PWCSFB to contract out for disposal services.

A request for contracting services was provided by NAS Alameda to PWCSFB in order to initiate procurement action. A form NAVFAC 9-11014/TF-1 (TF1) was used as a cover sheet to communicate NAS Alameda's request. The TF1 is simply a request form which summarizes the action(s) desired and provides a point-of-contact (POC) at the requesting command. Attached to the TF1 were supporting documents needed to initiate the procurement. In this case, there was the Official Government Estimate (OGE), the laboratory report, and the Request for Contractual Procurement (RCP), NAVCOMPT Form 2276. The RCP is the initiating command's assurance to the servicing activity, PWCSFB, that sufficient funds are available to discharge any obligations under that specific contract.

Once the request package was received at PWCSFB, a contract specialist was assigned to begin working on the procurement. The contract specialist acts as the contracting officer's agent and is responsible for preparing the contract for the contracting officer's signature. Informal discussions with customer personnel indicated that the contract specialist originally assigned was purported to be not very customer-oriented, lacked hazardous waste experience, and tended to work at his own pace. Since the Government estimate was less than $25,000, small purchase procedures could be used. A Request for Quotation (RFQ) was sent out to small companies that

PWCSFB knew would be able to bid on the job. Quotes were received, evaluated, and compared to the Government estimate and the other quotes. A determination of responsibility was also made in accordance with the provisions of the RFQ. Once evaluated, the award was made and the Purchase Order, a DD 1155, was finalized. Subsequent to award, the Government changed its official estimate since the disposal method could be changed from incineration to stabilization in favor of decreasing the price approximately $2,000. A modification, Standard Form 30, was issued to change the method of disposal at the ultimate destination. The change did not alter the basic purchase order and the Government determined that a modification was justified in lieu of cancelling the current contract and reissuing the RFQ. The contractor then performed under the contract and submitted the invoice to PWCSFB for certification and payment.

The process took a total of seven months. The waste was first drummed and analyzed in May 1993 and subsequently disposed of in January 1994.

B. CASE DISCUSSION

This section presents a narrative of the topics involved in environmental contracting. The discussion pertains to actions that are addressed by all people concerned, not just contracting personnel. In order for contracting personnel to appropriately contract for environmental services, they must become familiar with the processes involved in environmental maintenance. Pertinent items are identified and

discussed to illustrate and clarify the processes involved with hazardous material disposal.

It should be reiterated that this case is addressed from the Federal standpoint, basing analysis and discussion on Federal statutes. Title XXII of the California Code is very similar to the Code of Federal Regulations. In instances where the acronym "EPA" is used, it can generally be construed to include the appropriate State agency. When dealing in the environmental arena, it has been generally perceived that DoD guidance is built around Federal regulation or policy. From a shore-based perspective, DoD guidance should be referred to, but any and all actions should be initiated with an eye to the state requirements and statutes, since the state will be the source of compliance measures. If a topic is not addressed in state directives, EPA or the Department of Transportation (DoT) should then be consulted and followed with reference to any DoD guidance which may exist.

1. Material Identification

Material suspected of being hazardous must first be identified to ascertain its potential hazard to the environment. There are a wide array of definitions of what waste is and what it is not. Agency personnel must and do become familiar with the definitions contained in Title 40 of the CFR. Appendix I, 40 CFR §260 defines solid and hazardous waste in a series of decision charts. Figures 1 and 2 of Appendix I, are excerpted in Appendix B for illustration of the decision process. 40 CFR §§262

and 263 further delineate the responsibilities of generators[6], transporters, and owner/operators of Treatment / Storage / Disposal facilities (TSDF).

Under most circumstances, generators of hazardous waste are well aware of the wastes being generated at their facilities and have procedures in place to properly contain, store, and dispose of the material. These specific and detailed procedures are contained in the facility's operating permit which is published for everyone involved in the handling of these materials to become familiar with. NAS Alameda has a comprehensive program to properly manage the hazardous materials they maintain or generate. Included in this program is substantial training for all employees both military and civilian as outlined in 40 CFR §264.16. As mentioned, many of the hazardous materials handled are generally known. Detailed instructions are available regarding these materials on forms known as Material Safety Data Sheets (MSDS). Every work center must have MSDS for each known substance they deal with. Contained in the MSDS is a variety of information regarding chemical makeup, reactivity, handling procedures, safety precautions, first-aid instructions, and storage/disposal guidance.

In this case, no MSDS was held for pigeon waste (an aberration no doubt). Since the base engineers could not identify the waste as a specific hazard, it would have to be tested.

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[6]Generator means any person whose act or process produces hazardous waste listed in Part 261 or whose act first causes a hazardous waste to become subject to regulation.

2. Storage

Wastes must be stored properly to permit easy access, identification, and maintenance. Waste must also be stored to prevent spillage and hazard to human life and/or the environment. DoT sets forth the procedures for proper transportation of hazardous material in Title 49 CFR.

As mentioned in Section II B, a facility (base, structure, or area) must have a permit to store hazardous material. Generators of hazardous waste may temporarily store their waste for up to 90 days while awaiting transportation or disposal. Longer periods may be approved if a legitimate reason can be offered to a permitting agent. Storing waste beyond the 90 day period classifies that facility as non-temporary or permanent and thus requires an EPA sponsored permit. The permit specifies the types and lengths of time that material may be stored in that facility. Attendant to the permit is guidance on how materials should be stored and segregated to prevent spills or contamination, as well as provisions for the physical layout of that facility contained in 40 CFR § 264.30.

NAS Alameda has a permit to store hazardous waste beyond the 90 day limitation. The base went through the permitting process over a three year period ending on July 24, 1993 with the issuance of a 20 year Hazardous Waste Facility Permit by the California Department of Toxic Substances Control (DTSC). As part of the process, and an outgrowth of NEPA, the public was invited by DTSC to comment on the permit application to increase public awareness. The process of

inviting public comment was quite similar to that involving the Environmental Impact Statement. The permit application was offered for public viewing and was the source of substantial debate over the course of the process. Numerous local and national environmental groups turned out to voice their opinions and concerns over the base's proposed efforts to protect San Francisco Bay and its environs. The community at large also turned out in fairly large numbers to have their concerns addressed. The level of knowledge and activism present in the surrounding communities was a testament to the heightened concern over their environment. Primary issues revolved around discharges to groundwater, air emissions, and emergency response. The Navy responded to these concerns and provided the communities the requisite assurances that all base operations would be safe.

Once public debate over the environmental concerns was concluded, NAS Alameda could get on with the task of completing the permit application. The permit application consisted of two parts per 40 CFR §270. Part A consisted of general information regarding the base, descriptions of wastes to be handled, maps, and the like. Part B was used by EPA to determine if the base was capable of properly handling hazardous waste as well as properly conducting contingency operations such as a spill. Probably the most difficult challenge facing NAS Alameda was putting the safety requirements and procedures (Part B) down on paper which would satisfy both the permit process and be useful to base personnel as a working document. The basis of the document was the current Base Operating Instruction which had become obsolete

with the advent of the permit. It nonetheless provided the groundwork for satisfying the permit requirements. Once updated, expanded, and revised to accommodate the provisions of the CFR and any subsequent changes brought out through debate, the application was reviewed and approved by DTSC.

3. Penalties

Imposition of fines and penalties regarding environmental infractions can be severe.

> Any person who, without sufficient cause, willfully violates, or fails or refuses to comply with any order of the President may be fined not more than $25,000 for each day in which such violation occurs or such failure to comply continues. [Ref. 15;p. 869]

EPA is tasked with issuing compliance statements to all entities who deal with hazardous materials and wastes. EPA can issue administrative penalties to enforce its compliance mandate. EPA does have latitude in the amounts it can impose. These are based on the nature of the violation, the violator's past and present performance, the violator's ability to pay, and the prophylactic effect of the penalty. The RCRA Civil Penalty Policy provides very specific guidelines for penalty assignment. Civil penalty cases may also be brought in district court against violators. State agencies generally have this provision also. No double jeopardy exists, however, in the execution of both Federal and State compliance efforts.

Releases of hazardous materials carry great liability. The perpetrators of the release are liable for clean-up and all associated remediation costs, damages, and costs of health assessments. Hazardous material releases carry a potential liability of

$5,000,000 to $50,000,000 [Ref. 15;p. 871]. If responsible parties do not provide remedial or removal action upon EPA order, they may be liable for punitive damages equal to three times the costs incurred by Superfund.

DoD and the Department of Justice (DoJ) provide representation for employees named in civil suits in their official capacity. Personnel named in suits in their personal capacity may be represented by DoD/DoJ if the DoJ determines that it reasonably appears that the employee was acting within the scope of their employment. Any fines or penalties become the responsibility of the Government. Personal suits for Federal criminal violations are not usually supported by DoD/DoJ. State suits may be supported by DoJ if it appears that the person was acting within the scope of his/her job. Additionally, military personnel are also subject to the provisions of the Uniform Code of Military Justice (UCMJ). [Ref. 8;p. 1-5]

4. Testing and Identification

The testing process is not inherently difficult but warrants discussion as an important event in the process of hazardous waste disposal. The type of material determines the scope of work to be done, types of containers, transportation requirements, disposal methods, and finally cost. Very few DoD installations have the capability of analyzing waste samples. Construction or maintenance of laboratory facilities and retention of appropriate testing personnel would be too costly and inefficient from a cost benefit standpoint to justify conducting the testing in-house. Consequently, sample testing is accomplished through contracted regional private

testing laboratories. Indefinite quantity (IQ) type contracts are generally awarded for this type of service. IQ type contracts state simply that the contracting agency (DoD) will pay for a guaranteed minimum amount of services and then pay for any excess over the minimum on a per job basis. The laboratory performing the testing services must be EPA certified to perform the test standards specified in 40 CFR §261 and prescribed in EPA publication SW-846.

RCRA presupposes the generator's responsibility for correct determination of waste composition. In cases of faulty testing, generators generally have legal recourse against any lab who incorrectly processed waste samples. But through privity of contract, the generator must bear the burden of any costs involved and seek restitution from the lab or more likely its insurance company. Accountability in the testing process is maintained through the use of a chain of custody form as the sample passes from the originator to/within the lab and back to the originator. Nevertheless, it is the sole responsibility of the generator to interpret the test results and determine their adequacy and applicability to the situation.

In this case, the sample was drawn on May 4, 1993, delivered to Eureka Labs on May 11, 1993, and tested on May 12&13, 1993. Figure 3 is a printout of one of the various tests done in accordance with the EPA prescribed procedures. It illustrates an excessive presence of Chrome at 63.5 mg/l in the sample of which the limit is 5 mg/l.

5. Disposition and Funding

Once lab results are assessed, the agency may then start the process of contracting for disposal. The originating command submits a purchase request (PR) to the servicing activity. Included with the PR are supporting documents needed by the servicing command to contract for services. The servicing activity will then validate the information in the PR, generate an OGE, and verify appropriate funding is available.

In this case, NAS Alameda submitted the NAVFAC Form TF-1 purchase request (Figure 4) to the Public Works Center to dispose of seven drums of waste containing excessive levels of chromium. The lab reports, Official Government Estimates, and the RCP accompanied the PR to the PWCSFB contracting office.

Verification of funding is crucial to the process. In accordance with 31 USC §1517, the Anti-Deficiency Act, committing unavailable funds is illegal. Therefore PWCSFB (along with every other contracting organization) requires a signed authorization stating funds availability. Intra-Service agencies (e.g., Navy to Navy) will use a NAVCOMPT Form 2276 to accomplish this requirement (see Figure 5). Inter-Service agencies (e.g., Navy to Defense Logistics Agency) will use a Military Inter-Service Purchase Request (MIPR) for a purchase request and funds verification. The funding is provided through the originator's O&M account.

Large scale cleanup operations funding is provided through DoD's Defense Environmental Restoration Account (DERA) and down to the Services through the

Installation Restoration Program (IRP) which NAVFAC manages as the Comprehensive Long-term Environmental Action, Navy (CLEAN) program. The CLEAN program is focused on restoration or remediation of installations in order to rectify neglect. It is comparable to Superfund in many respects.

A note of explanation is necessary at this point. The Defense Reutilization and Marketing Office (DRMO) is tasked by DoD to be the focal point for all hazardous material removal and disposal efforts. DRMO will follow virtually the same procedures as described throughout this Thesis acting as the contracting agency for removal and disposal efforts in consonance with their sales and reutilization operations[7]. They will issue Indefinite Quantity type contracts with area firms for removal and disposal of hazardous waste. They also have permits for non-temporary storage at their various facilities. Their funding is accomplished through reimbursable work orders under the Defense Business Operating Fund (DBOF).

6. Contracting for Services

DRMO has the task of providing removal and disposal services for customers within their jurisdiction. In this case, DRMO was hesitant to provide the needed services since they questioned the composition of the waste. They contended that the waste was organic in nature and could be handled through the base's IWTP, which serves essentially the same purpose as a public sewage treatment plant. DRMO

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[7]DRMO offices are regional in nature. They are generally located near large or high concentrations of military operations.

also handles a large volume of business, sometimes causing a strain on its storage facilities. In these cases customers are required to store the waste at their own facilities or their own expense. They may also decide, as PWCSFB did, to contract for disposal themselves. Though there are no prohibitions against this practice, it is discouraged, in order to maintain the economies of scale needed to control costs.

Once the purchase request is received by PWCSFB, it is reviewed for adequacy, specifically that appropriate funding is provided by the originator (NAS Alameda) and a fair description of needed services is provided. As mentioned earlier, the form TF-1, NAVCOMPT 2276, OGE, and the laboratory results serve these ends. At first analysis, the relative simplicity of the language contained in the TF-1 along with the supporting documents seems to present a cavalier and uninformed attitude in dealing with hazardous waste. Upon further analysis though, the presented information adequately meets the test of whether a contract specialist can contract for the services needed. Therefore, the situation is properly presented. There are seven 55 gallon drums of solid waste which contain excessive levels of Chrome which need to be disposed of. This indicates that an EPA monitored toxic substance (Chrome) is involved. The waste has been stored in appropriate containers which are not subject to specific DoT restrictions regarding transportation.

This area is especially confusing. EPA lists Chrome as a hazardous waste. Per 49 CFR §171.8, DoT does not classify Chrome as a hazardous substance or material for transportation unless it exceeds 10 pounds (of Chrome) per container or

10 percent of weight or 100,000 parts per million (ppm). For DoT purposes, Chrome is considered an Other Regulated Material (ORM-D) which is defined as a commodity which presents a limited hazard during transportation due to its form, quantity, and packaging [Ref. 16;p. 484]. Per 49 CFR §173.16, an ORM-D material (Chrome) is not assigned a specific Packing Group which means it may be packaged in any container that will reasonably prevent leakage under normal circumstances and is acceptable to the transporter. Packaging requirements are specified in 49 CFR Part 173 while §173.7 addresses U.S. Government material which is exempt from the CFR provisions if DoD certifies the packaging as meeting or exceeding the specifications of DoT. Those who are experienced in working with hazardous material (by most people's definition) are less confused by these requirements. Their abilities are formed more out of practice and repetition rather than true understanding of the regulations contained in the CFR. As new situations present themselves, personnel involved will generally rely on past experience or will talk to EPA personnel for an interpretation or advice.

Along with the aforementioned documents, an Official Government Estimate accompanies the PR. The Government will readily admit that it does not have an adequate in-house capability to estimate hazardous waste removal and disposal costs. The estimating personnel will rely more on past information along with a reliance on contractors to provide unofficial estimates. Generally, the estimating personnel will use whatever information they have available, such as the Department of Labor (DoL)

Fair Labor Standards Rate, to determine prevailing wage rates in a given area during the past quarter. Included in the OGE is the method of disposal as prescribed in 40 CFR Part 264.

The contracting officer receives this package and must act to produce a contract for the services requested. After determining that the PR is sufficient, the contracting officer must then decide the procurement strategy to be followed. In this case, small purchase procedures may be used since the price was estimated to be under $25,000 [Ref. 17:p. 484]. Small purchase procedures allow for any purchase under $25,000 to be set aside for small business concerns provided other sources, as defined in 48 CFR §8.001, such as GSA or Federal Prison Industries, cannot be used. Source development and selection is much simplified in these procedures. In the area of hazardous waste removal, an attitude toward attempting to dissolve the small business set aside requirement in favor of promoting adequate competition by responsible offerors in order to attain the best service possible is gaining momentum[8].

Development of potential sources is reasonably straightforward in this case. For purchases over $2,500 but less than $25,000, contracting officers need only to solicit quotations from a reasonable number of sources in order to promote competition

[8]Responsibility in the contracting lexicon refers to the ability of a company to perform the contract in all respects from financial viability to management and technical competence. Responsibility determination is one way a contracting officer mitigates risk.

and ensure the procurement is advantageous to the Government [Ref. 17:p. 178]. PWCSFB maintains a Qualified Bidders List (QBL) of those firms which can perform environmental requirements. The list is used to build a potential list of sources. Sources of additional information are provided by the personal experiences of personnel within PWCSFB such as the Contracting Officer, Planning & Estimating personnel, and engineering personnel.

Once a prospective list of bidders is developed, the Statement of Work (SOW) can be generated. Although the SOW is effectively generated by the originator, it must be satisfactory to the contracting personnel in order to communicate everything prospective offerors need to develop their offers. An adequate purchase description should set forth the essential physical and functional characteristics of the materials or services required to meet the minimum requirements that the Government needs [Ref. 18:p. 176]. The SOW must be understood by both the contracting office and the contractor in order to promote effective competition and ultimately, effective performance of the contract. The following SOW is excerpted from the actual Request for Quotes (RFQ) and is a fair representation of the needs in this case:

> 3. SPECIFIC REQUIREMENTS: contractor shall transport seven (7) 55 gallon drums of pigeon excrement. The drums of excrement shall be treated by incineration in accordance with all Federal, State, and local Environmental Protection Agency (EPA) regulations. The Contractor shall provide all necessary forms required for advance application, compliance, profile, and all other documentation required to accept and treat excrement. The Government will make available to the contractor a lab analysis of the excrement for review by the Contractor prior to commencement of services.* The Contractor, upon

completion of required services described in this contract, shall provide the Government with a certificate of treatment and disposal that is approved and in compliance with all Federal, State and local EPA requirements and regulations. 3.1.2 Certificate of Final Disposal: Mere acceptance of the hazardous waste at a properly permitted treatment, storage, or disposal facility (TSD) does not meet the definition of final treatment nor final disposal under this contract. It is the prime Contractor's responsibility to obtain all necessary documentation to prove that the final treatment or final disposal of all items has been accomplished. This documentation shall be attached to the certificate of disposal and submitted with, or prior to, the invoices.

The Request for Quotations is compiled and reviewed prior to promulgation to ensure accuracy and completeness. In this case, the RFQ was published at the PWCSFB as well as being sent to the potential offerors as discussed earlier. There is no requirement for the RFQ to be synopsized in the Commerce Business Daily (CBD) since small purchase procedures apply. There is no requirement for a sealed bid process, although the contracting officer could have very well used this process had she deemed it appropriate.

As quotes are received, the contracting officer must validate each quotation for responsiveness and responsibility, determine if the quotation is fair and reasonable, and if the quotation, as contained in the context of the solicitation process, conforms to all laws and statutes. When all quotations are received, the contracting officer must then compare the low offer against the OGE and the other quotes. It is worthy of mention that the OGE previously submitted is just an estimate. The contracting officer is required to perform a price analysis to determine if the quotations are fair and reasonable [Ref. 19:p. 258]. Sole reliance on the OGE can be

considered a dereliction of responsibility. It may also cause the Government to spend more money than it should. This process holds true if the contract is worth $500 or $5 million.

The contracting officer determines that the low quote offeror is acceptable and awards the contract. In this case, award is made as a purchase order using a DD Form 1155 as the contract. The contractor, as stated in the terms of the contract, must provide certification as to its responsibility. This certification takes the form of documents attesting to the contractor's legitimacy and includes copies of its current EPA/DoT certificate/license as an accepted transporter of hazardous material, the EPA certificate/license of the disposal site, and certificates of insurance for both the prime and any subcontractors.

7. Performance

Once the contract is formed and the contracting officer is satisfied as to the contractor's responsibility, the performance phase of the contract may begin. According to the terms of the contract, the contractor has a limited period of time to perform the removal and a limited period of time to ensure disposal.

A Quality Assurance Representative (QAR) from PWCSFB is assigned to monitor the performance of the contractor. In the NAVFAC claimancy, contract administration is done by the procuring office whereas other organizations often use the Defense Contract Management Command (DCMC) for their administration services. The QAR is generally a PWC engineer assigned to monitor the contractor's

efforts and is armed with a copy of the contract and a very strong working knowledge of environmental statutes. The QAR will be the Contracting Officer's Technical Representative (COTR), acting as the liaison between the contractor and contracting officer. The QAR is tasked with enforcing the terms of the contract and assisting the contractor in interpreting the requirements. The QAR is not authorized to modify the contract or make the contractor perform anything that is not included in the contract. This is required to be done by the contracting officer with a formal modification to the contract and may be done unilaterally or bilaterally. The Government and the contractor must be aware that the QAR does not issue changes nor should the contractor rely on the QAR's information to effect its own changes lest an unauthorized commitment or constructive change may occur.

The QAR will generally sign the manifest when the transporter receives the waste. The manifest is the essence of the "cradle to grave" philosophy of RCRA. Discussion of the requirements and provisions of the manifest are contained in 40 CFR §262.20 and 49 CFR §172.205.

C. SUMMARY

This case is quite illustrative of the process of environmental contracting for disposal services whether it be at PWCSFB, DRMO, or virtually any business concern. The requirements are the process. Each action within the process can be traced back to a reference based in Federal regulation. Although, in practice, the steps become routine with constant application, the process is rife with pitfalls if appropriate care is

not taken. There is a situation, requirement generation, procurement action, and contract administration. The situation and requirements have been laid out to describe the process. This Thesis has identified five predominant issues to be faced in the hazardous waste disposal area. They are regulation compliance, organizational communication, contract performance oversight, small business concerns, and manifest administration. The next chapter will address these issues and offer a discussion of each.

IV. ANALYSIS OF ENVIRONMENTAL ISSUES

Within the context of this case, several issues must be addressed. RCRA imposes stringent guidelines regarding the handling of hazardous waste. Improper handling, no matter how innocent or accidental, can cause devastating effects to people and the environment. Each participant in the process, from generators to owners of disposal facilities, must comply with the regulations.

The process of removing and disposing of hazardous waste is, at first glance, a terribly complex and rigid process. A wide array of laws, regulations, and guidelines constrict the process to almost a lock step procedure. Regulation, oversight, and paperwork seem to be the costs of doing business in the environmental arena. If one recalls images of factories spewing forth tons of smoke into the air, industries dumping wastes directly into the waterways, and Los Angeles and New York City shrouded in cloaks of smog, these impositions may seem barely sufficient.

A. REGULATION COMPLIANCE

EPA's mandate was to find ways to abate environmental hazards and force compliance across the country. With the help of state environmental agencies, compliance efforts take the shape of issuing permits for TSD facilities, conducting compliance inspections, issuing guidance/advice, as well as reviewing and generating reports. Because of the overwhelming number of potential contaminants and polluters,

EPA's job is undeniably tough. EPA must rely on the individual states to carry out much of the compliance enforcement and in turn, or through default, states must rely on their constituents to voluntarily comply and essentially police themselves. There is and always will be unscrupulous people who will take advantage of the holes in the law or the lack of ability of regulatory agencies to efficiently regulate compliance. Have we known anyone who has changed the oil in their vehicle and just poured the waste into a storm drain or in the ground?

Within DoD, as with most industrial firms, adherence to the laws is garnering more attention each year. Increased knowledge and vigilance of the public at large and a propensity for the courts to support environmental concerns have forced hazardous waste generators into a more compliant posture in order to maintain/improve their public image as well as reduce overall costs from fines and litigation. Enforcement of the RCRA philosophy of "cradle-to-grave" accountability has strengthened this approach. Navy PWCs have fostered a strong awareness and sensitivity of environmental problems and have tried very hard to train and hire environmentally intelligent people in support of these growing hazardous waste removal and clean-up initiatives. Base commanders have become keenly aware of the consequences of environmental negligence. The commander and base employees may become personally liable for acts of negligence. Some base commanders have even taken out personal liability insurance to safeguard against such occurrences. This appears to be a spurious expense since most commanders are rarely negligent and are usually acting

within the scope of their official duties when releases occur. Base commanders are keenly aware though, that their employees do not always have the same level of concern for the environment. Comprehensive hazardous material training must be in effect to promote compliant habits and reduce the risk of personal liability suits.

Presentation of unknown substances makes life for the base personnel a little unsettling. Not knowing the type of material or possibly from where it came, is cause for great concern by base commanders since this material can place many people at risk. The material may offer the potential for headlines and career jeopardy due to poor execution, deficient training, or poor security. If an unknown substance is found, base personnel will have the material containerized, marked as hazardous waste, labeled as "pending analysis", post the sampling date and 24 hour phone number for a point of contact. Samples must then be sent to a lab for testing. Base personnel will then investigate to determine the source of the material and take the steps required to remedy the situation. Steps may range from actual cleanup to identification and prosecution of illegal dumpers. In any case, the local EPA office should be contacted and kept informed of the situation.

The increased environmental attention also has the effect of weeding out the marginal to non-performing people within contracting organizations in order to reduce the risks of litigation. Poor performance by a contracting officer may not only subject DoD to public embarrassment but may also prove to be very costly in terms of fines, penalties, and the costs of clean-up and remediation, not including litigation. Some

examples of poor performance include ineffective communication of a requirement to a contractor whereby the contractor cannot perform because of the Government's actions, failure to determine responsibility of a contractor, ineffective contract administration, or no accountability. The costs associated with these actions effectively reduce the installation's available O&M funds. As mentioned before, the process of contracting for environmental services is not substantively different than contracting for any other requirement. However, the risks for potential damage are greater, and must be borne and mitigated by both the generator and the contractor.

B. ORGANIZATIONAL COMMUNICATION

In this case, organizational communications problems were observed in the procurement process. This is not a revelation. The pigeon case is reasonably simplistic in its scope and execution but it took eight months to complete. Requirements generators were reluctant to work closely with contracting personnel and the contract specialist often forsook service for to-the-letter compliance with regulations and perceived self-servitude. The contract specialist was seen as a barrier to effective disposal. Engineering personnel didn't feel as though the contract specialist was serving their interests and were unwilling to communicate openly with him. It was an "us against them" feeling. The resultant adversarial relationship within the organization promoted the potential for an injurious situation. Critical needs or requirements could have been overlooked which could subsequently cause costly modifications or lawsuits. Medical problems forced the contract specialist's removal

from the environmental contracting office. His replacement was perceived to be a more customer oriented person whose service approach and knowledge allowed the uirement to proceed smartly. This does not imply that a customer focus approach should cause the contracting function to be subservient to the customer. It merely means that a responsive organization, in terms of service attitude and knowledge, becomes better equipped to provide better service, when communications are open and animosity and distrust are lessened.

Conversely, contracting personnel indicated that requirements generators, the base engineers, were uncooperative and had their own agenda where the contracting person was made to feel obligated to do the base engineers' work. The prevailing attitude of mistrust stemmed from a misunderstanding of the others' jobs and needs. In other words, everyone was working from their own perspective and preferred not to take a holistic approach to the process. The situation is recognized by the workers and supervisors alike but they are reluctant to offer or attempt solutions.

C. CONTRACT PERFORMANCE OVERSIGHT

In addition to effective communication of the requirement from the generator to the contracting officer to contractor, contract administration is critical to risk mitigation. Oversight of the disposal process is the key element in reducing DoD's risk under RCRA. Organizations (personnel) handling hazardous material within DoD are by and large diligent and well intentioned. With RCRA, once waste is removed by a contractor, the "out of sight, out of mind" philosophy cannot prevail. If oversight

is divorced or ineffective, potential damage to the generator is greatly increased. Courts have indeed held generators liable for their contractors' problems, especially in cases where oversight was not present. In general, PWC contracting officers effectively hold contractors responsible for their actions through effective contract oversight by the QARs. Contractors are motivated to perform under the contracts in order to remain viable in this highly competitive business. Yet, the potential for ineffective enforcement is present because of already limited resources to monitor contractors. There are unscrupulous contractors in this burgeoning industry and competition is increasingly keen. The need for oversight is great, but declining resources and increasing requirements place pressures on organizations away from oversight and follow-up, to the new requirements coming through the door each day.

The groundswell of process oriented management is not well suited to contract administration in the hazardous waste arena. It would be nice (albeit naive) to believe that all parties concerned could work toward improving the process of hazardous waste removal and disposal. Many pressures come to bear for them to remain competitive with their peers and the large waste management firms; and therein lies the most important need for increased, not decreased, oversight.

D. SMALL BUSINESS CONCERNS

Problems exist in the use of small business concerns in the environmental area. Hazardous waste removal is done most often by small business firms which are under immense pressure to remain viable and competitive. Problems in this area stem from

contractors defaulting on contracts after they had been certified as responsible either by the contracting officer or as a result of the Small Business Administration issuing a Certificate of Competency. Explanations for default range from loss of critical technical or managerial employees to bankruptcy. As small firms compete, they often find themselves overextended from either a technical or financial standpoint resulting in default after a responsibility determination.

A strong case may be made that small business concerns cannot compete against larger firms because of the costs they encounter in order to remain competitive. Insurance is an especially debilitating cost. The costs for insurance have become prohibitive, causing firms to make conscious decisions regarding their potential liability (and the Government's by extension). Even though insurance certification is required as part of responsibility determination, some firms will cancel their policy after award to either reduce costs and use the savings to buy into an award or cancel to increase profit. In these cases, the Government is assuming great risk if the contractor defaults or has a release.

Scrupulous firms face increasing insurance and training costs which increase their overhead tremendously. As a result, small firms have little flexibility to overcome any adversity encountered whether on existing or future contracts [Ref. 5;p. 14]. It has been recommended to contracting officers that experience and technical capability become primary factors in technical evaluations of offers. Will this alleviate contract

default or poor performance. Probably not, but it will provide a sturdier basis to award contracts to more capable firms.

E. MANIFEST ADMINISTRATION

The manifest is the only true accountability document which tracks the waste from generator to disposal. Within thirty days, the disposal facility must return a copy of the manifest to the generator certifying that the waste was indeed received. Additionally, the disposal facility must report all receipts and disposals to the EPA in a biennial report. Generators must have a working information system to maintain and keep track of its manifests. A recent GAO report stated that DoD agencies were not following up on missing manifests [Ref. 5;p. 20]. Since RCRA places the onus of proof on generators, agencies are subjecting themselves to enhanced and unnecessary risks for TSDF improprieties.

Failure to track missing manifests can cause the generators to be liable for TSDF improprieties because, by regulation, they are neglecting their responsibility. Although most of the problems are administrative in nature (receiving and retaining missing processed manifests) and may seem trivial, it is the only way EPA has of verifying proper disposal of hazardous waste. By holding the generator responsible for proper receipt at the disposal facility no matter how long the chain is, EPA is trying to ensure accountability in order to "close the loop". As discussed earlier, the generator is financially responsible for the waste. Through the contract though, the generator may

pass on the costs of remediation, etc. The administrative and litigation costs are nonetheless expensive and need to be avoided.

F. SUMMARY

This chapter has presented an analysis of the key issues and risks currently associated with environmental contracting. The five areas, regulation compliance, organizational communication, contract oversight, small business concerns, and manifest administration present the areas that offer the greatest potential for non-compliance, impropriety, or litigation. This list is certainly not all inclusive, every facet of hazardous waste disposal has pitfalls associated with it. These five areas have not gone unnoticed but they do keep recurring as problem areas. When dealing with hazardous waste, one must be especially mindful of these areas as a whole and not just individually. The whole process must be scrutinized by technicians and supervisors alike in order to prevent severe financial penalty or embarrassing headlines and extraordinary additional workloads.

The following chapter offers the conclusions and recommendations of this Thesis. Areas for further research are presented to further the study of environmental contracting in the hazardous material area.

V. CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the conclusions of this Thesis, offer recommendations, and suggests areas for further research. These conclusions and recommendations are intended to promote further thought or discussion on the increasingly important matter of environmental contracting.

A. CONCLUSIONS

The research indicates that for all the constricting regulations the process actually seems to work and is moving forward to abate pollution of the environment. The management and contracting approach to hazardous waste removal services at PWCSFB is sound. It is carried out based on the tenets of Federal and State Codes of Regulation and the Federal Acquisition Regulation (FAR) and is being handled by competent engineers, contracting officers and contract specialists. EPA and state oversight is not enough to ensure compliance with the regulations. The feeling that environmental compliance is paramount has been infused into the organization and the base commander, directors, and technicians seem to understand the consequences. Problems of compliance within the PWC organization appear to happen because of lack of resources or follow up rather than negligence. The State and EPA will inspect installations for compliance when they can, but it is the installation which must discipline itself to comply or face serious financial or career repercussions.

B. RECOMMENDATIONS

Major renovation of the contracting process is not currently necessary. FAR provisions are being met, adequate competition is being sought and received, and waste is effectively being removed and disposed of. There are areas for improvement, however.

Training is important and should be increased. Contracting officers and contract specialists should receive more training regarding hazardous waste regulation and compliance. The current perception that a good contracting specialist can handle any requirement has merit but the risks of oversight or ignorance are becoming increasingly costly. Conversely, the requirements generators should be receiving more training regarding the contracting process. This philosophy should serve to reduce barriers to communications between the generators and the contracting personnel.

Delete the small business set-aside provision for removal services under the small purchase threshold. The contracting officer may justify removal of the set-aside in cases where adequate competition does not exist or where the Government's interests are not being served. Regardless of the contracting officer's options, most will remain within the small business arena out of convenience. Does this not then serve the intent of the small business set aside? Where damage to life or the environment is concerned, the emphasis should be on performance and responsibility not promotion of socio-economic goals. Should the small purchase threshold be increased to $100,000, contracts costing under $10,000 would not even need to be competed. Open

competition will allow for better service, lower costs from more competition, and less accidents because technical capability will be expanded. Costs will decrease as accidents decrease because liability insurance will become more affordable for all firms. Another option exists. Job scopes could be decreased to allow for small firms to be provided an opportunity to compete without being overcome by events that they could not have foreseen and are beyond their capability. This is very similar to a subcontracting requirement within the basic agreement.

C. AREAS FOR FURTHER RESEARCH

Hazardous waste removal contracting is a constantly expanding business and will continue to garner more attention in DoD as prevention becomes more prevalent than remediation. Of particular interest to DoD is whether the process can be improved while decreasing risks and overall costs.

Some areas for further research involve risk allocation and assignment of costs. Although RCRA poses cradle-to-grave accountability for hazardous wastes, DoD has generally held contractors pecuniarily responsible for their actions. How are these risks being accounted for by DoD and the contractors, and is this risk allocation being appropriately reflected in the cost?

Overhead costs in waste management firms appears to be high. Most notably, insurance has become a prohibitive cost of doing business. Has hazardous waste insurance become a cash cow for insurance companies where these costs are being passed on to the Government?

Virtually all hazardous waste removal contracts are fixed price contracts. Do these contracts present the most efficient and effective vehicle for incentivizing contractors to perform their best?

Per the Pollution Prevention Act of 1990, the Federal Government has a mandate to reduce hazardous waste with a particular emphasis on procurement reduction. Is this mandate being carried out effectively?

Lastly, DRMO is the focal point for waste removal and disposal, although individual agencies may contract out at their discretion. Regulation and compliance of hazardous waste programs is controlled by the respective Services. Could this function be consolidated under DLA or folded into one of the other Services' organizations, such as NAVFAC or the Army Corps of Engineers, in order to establish a more effective effort?

APPENDIX A MAJOR FEDERAL ENVIRONMENTAL LEGISLATION

AA	1906 Antiquities Act
AEA	1954 Atomic Energy Act
AHERA	1988 Asbestos Hazard Emergency Response Act
AHPA	1980 Archeological & Historical Preservation Act
AIRFA	1978 American Indian Religious Freedom Act
APA	1980 Acid Precipitation Act
APPS	1980 Act to Prevent Pollution from Ships
ARPA	1979 Archeological Resources Protection Act
ASNAA	1979 Aviation Safety & Noise Abatement Act
BEPA	1979 Bald Eagle Protection Act
CAA	1977 Clean Air Act
CAAA	1990 Clean Air Act Amendments
CBRA	1982 Coastal Barrier Resources Act
CERCLA	1980 Comprehensive Environmental Response, Compensation, Liabilities Act
CWA	1972 Clean Water Act
CZMA	1966 Coastal Zone Management Act
EPCRTKA	1986 Emergency Planning Community Right-to-Know Act
EQIA	1970 Environmental Quality Improvement Act
ESA	1973 Endangered Species Act

FFCA	1992 Federal Facilities Compliance Act
FIFRA	1972 Federal Insecticide, Fungicide, Rodenticide Act
FLPMA	1976 Federal Land Planning & Management Act
FRRRPA	1974 Forest & Rangeland Renewable Resources Planning Act
FWCA	1958 Fish & Wildlife Coordination Act
GCPA	1987 Global Climate Protection Act
HMTA	1975 Hazardous Material Transportation Act
HSWA	1984 Hazardous & Solid Waste Amendments
LLRWPA	1980 Low Level Radioactive Waste Policy
MBCA	1929 Migratory Bird Conservation Act
MBTA	1918 Migratory Bird Treaty Act
MMPA	1972 Marine Mammal Protection Act
MPPRCA	1987 Marine Plastic Pollution Research & Control Act
MPRSA	1972 Marine Protection, Research & Sanctuaries Act
MUSYA	1960 Multiple Use Sustained Yield Act
MWTA	1988 Medical Waste Tracking Act
NANPCA	1990 Nonindigenous Aquatic Nuisance Prevention & Control Act
NCA	1972 Noise Control Act
NEPA	1969 National Environmental Policy Act
NFMA	1976 National Forest Management Act

NHPA	1966 National Historic Preservation Act
NWPA	1982 Nuclear Waste Policy Act
NWRSAA	1966 National Wildlife Refuge System Administration Act
OCSLA	1953 Outer Continental Shelf Lands Act
OPA	1990 Oil Pollution Act
PPA	1990 Pollution Prevention Act
PRIA	1978 Public Rangelands Improvement Act
PVMWADA	1988 Public Vessel Medical Waste Anti-Dumping Act
RA	1989 Refuse Act
RCRA	1976 Resource Conservation & Recovery Act
RGIAQRA	1986 Radon Gas & Indoor Air Quality Research Act
SARA	1986 Superfund Amendments & Reauthorization Act
SDWA	1974 Safe Drinking Water Act
SWDA	1965 Solid Waste Disposal Act
SLA	1953 Submerged Lands Act
SMCRA	1977 Surface Mining Control & Reclamation Act
TGA	1934 Taylor Grazing Act
TSCA	1976 Toxic Substance Control Act
UMTRCA	1978 Uranium Mill Tailings Radiation Control Act
WA	1964 Wilderness Act

WFRBA	1971 Wild & Free Roaming Burros Act
WQA	1987 Water Quality Act
WRAA	1966 Wildlife Refuge Administration Act
WSRA	1968 Wild & Scenic Rivers Act

APPENDIX B FIGURES

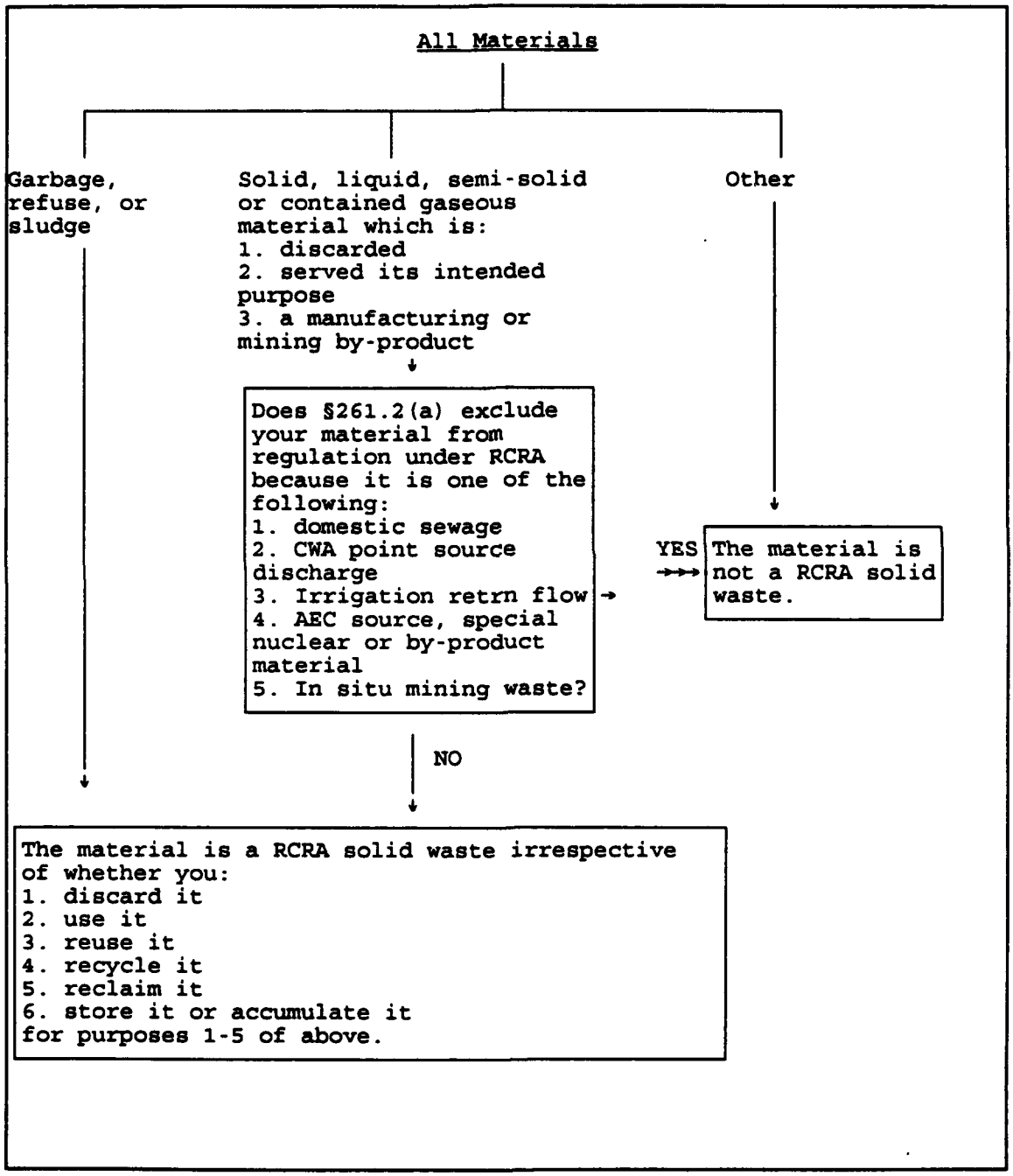


Figure 1 Definition of a Solid Waste

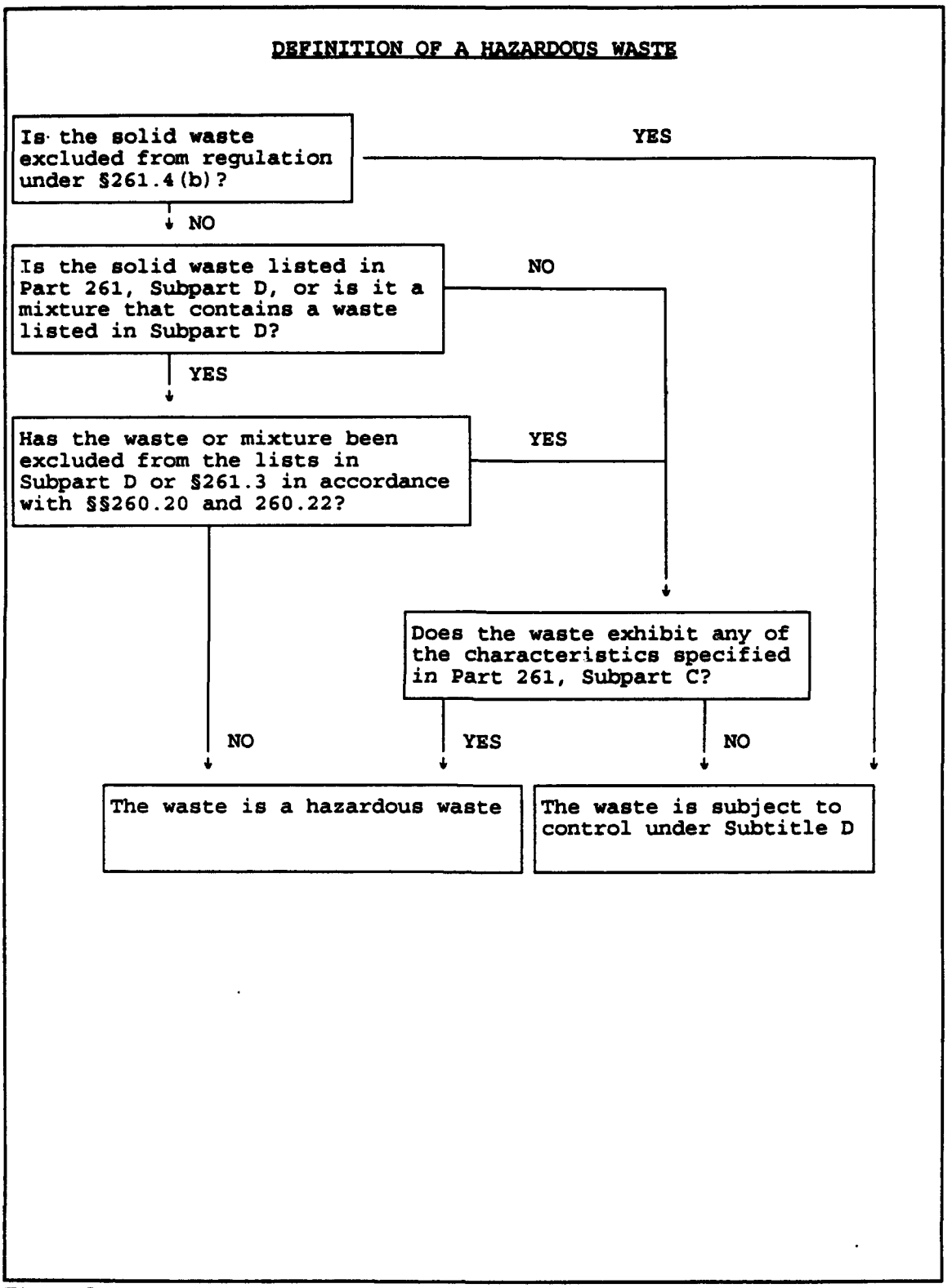


Figure 2 Definition of a Hazardous Waste

METALS
EPA METHOD 6010/7000

EUREKA LABORATORIES, INC.
6790 Florin-Perkins Road
Sacramento, CA 9,5820
(916) 381-7953

Order No.: 93-05-120
Hazardous Waste Testing
Certification: 1165

CLIENT:	PUBLIC WORKS CENTER-SFBAY	DATE SAMPLED:	05/04/93
CONTRACT:	N62474-92-D-0430	DATE RECEIVED:	05/11/93
P.O. #:	93EL-831	DATE EXTRACTED:	05/12/93
PERMIT#:		DATE ANALYZED:	05/12,13/93
ORDER#:		INSTRUMENT ID:	JA 9000, PE5100, PE5100ZL, VARIAN 30
LOCATION:	NAS ALAMEDA BLDG 410		
		MATRIX:	SOLID
		%MOISTURE:	NA
ELI SAMPLE ID:	9305120-01A	REPORT WT:	WET
SAMPLE ID:	410 P.W.	SAMPLE VOL/WT:	1g,Hg-0.2g

METALS	RESULT [mg/Kg(ppm)]	D/L [mg/Kg(ppm)]	METHOD
Silver	<0.5	0.5	6010
Barium	40.2	0.5	6010
Beryllium	<0.5	0.5	6010
Cadmium	2.9	1.0	6010
Chromium	63.5	0.5	6010
Chromium III▲	63.5	0.5	6010
Copper	30.5	0.5	6010
Nickel	52.2	2.0	6010
Lead	164.0	3.0	6010
Antimo	<3.0	3.0	6010
Thalli	<5.0	5.0	6010
Zinc	310.0	0.5	6010
Iron	8490.0	5.0	6010
Arsenic	6.0	0.4	7060
Selenium	0.7	0.3	7740
Mercury	0.2	0.1	7471

▲ = Cr III is the difference between Total Cr and Cr VI.
NA = Not Applicable
NR = Not Requested by client
D/L= Detection Limit

Barbara Faubert
Chemist

Susie Lee, Ph.D.
Chemist

April 2. 1993
Date

00002

Figure 3 Laboratory Test Results

CUSTOMER REQUEST

1. PR	2. JOB ORDER NUMBER	3. AMEND NUMBER	4. REQUEST NUMBER
	1816817		11286

PART 1 - REQUEST (By Customer)

TO NAVY PUBLIC WORKS CENTER

5. FROM 614

6. BRIEF TITLE 1126730

DISPOSE PIGEON WASTE.

7. TYPE OF SERVICE REQUESTED (Check One)

- ☐ SCOPING ESTIMATE
- ☐ CONTRACT ESTIMATE
- ☐ RECURRING ESTIMATE
- ☒ OTHER SPECIFY: DISPOSAL REQUEST
- ☐ SPECIAL PROJECT PREPARATION
- ☐ ENGINEERING INVESTIGATION
- ☐ FUNDABLE ESTIMATE ESTIMATED FUNDING DATE ____________
- ☐ MINOR WORK AUTHORIZATION M - ____________

8. FOR FURTHER INFORMATION CALL	9. PHONE	10. REQUESTOR (Signature)	11 DATE
H. PATEL / C614	302-5463	[signature]	8/24/93

12. PART II - DESCRIPTION OF PROBLEM/REQUIREMENT (By Customer)

1) DISPOSE BY CONTRACT 76 X 55 GALLON DRUMS OF PIGEON DROPPING FROM AN INDUSTRIAL WASTE TREATMENT PLANT. WASTE HAS HIGH LEVEL OF CHROME.

2) GOV. EST. & ANALYSIS ATTACHED

3) ITEMS ARE LOCATED @ BLDG 13, NAS ALAMEDA

4) REQUEST CONTRACTOR DELIVER PROFILE, MANIFEST, AND ALL OTHER DOCUMENTS.

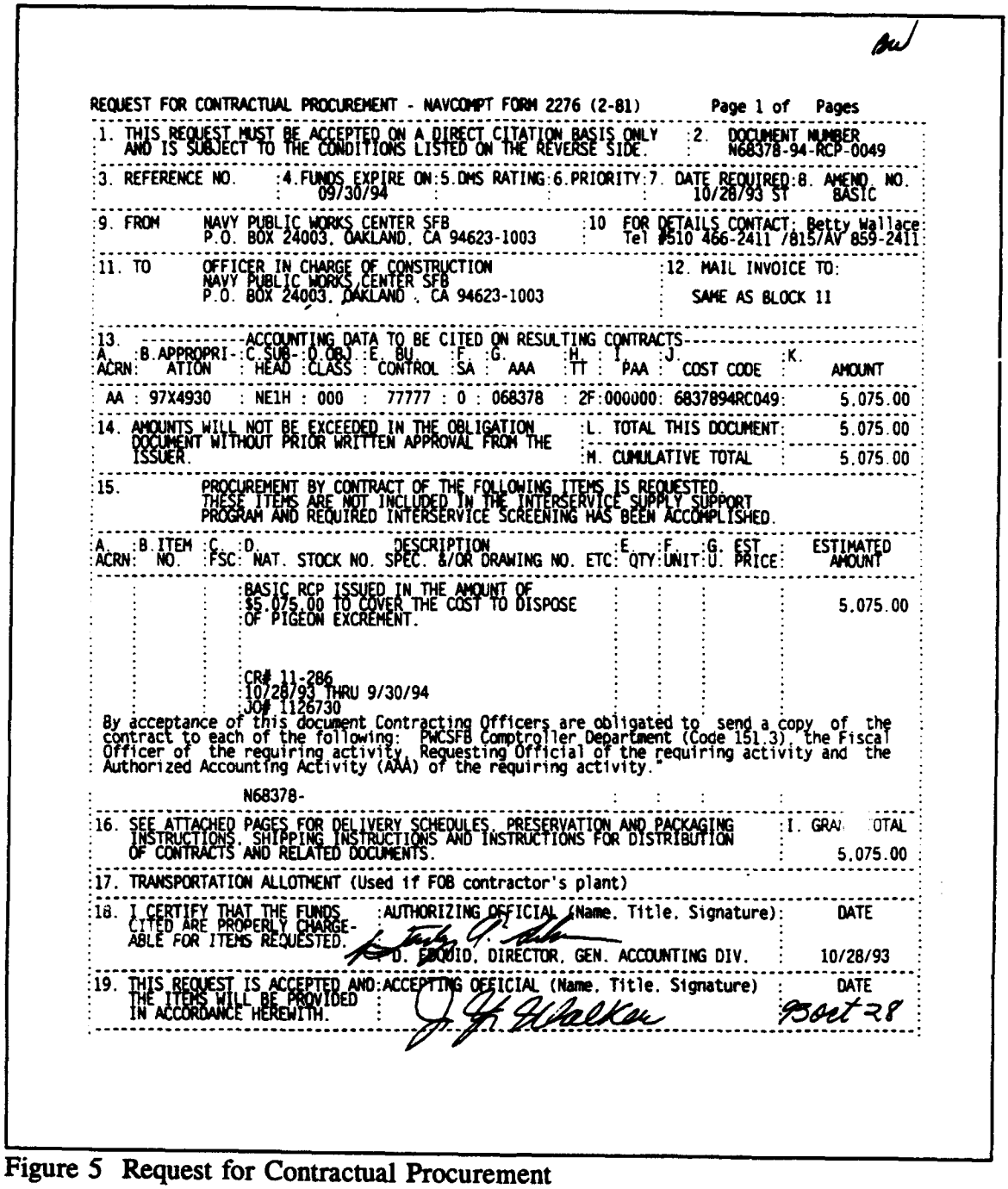
13. STATEMENT OF CONSTRAINTS

14.

- ☐ SKETCH/PLAN NO. ____________
- ☐ INVESTIGATION OR INSPECTION REPORT
- ☐ OTHER (Identify) ____________

NAVFAC 9-11014/TF-1 (REV. 5-90)

Figure 4 NAVFAC Purchase Request



REQUEST FOR CONTRACTUAL PROCUREMENT - NAVCOMPT FORM 2276 (2-81) Page 1 of Pages

1. THIS REQUEST MUST BE ACCEPTED ON A DIRECT CITATION BASIS ONLY AND IS SUBJECT TO THE CONDITIONS LISTED ON THE REVERSE SIDE.
2. DOCUMENT NUMBER N68378-94-RCP-0049

3. REFERENCE NO.	4. FUNDS EXPIRE ON	5. DMS RATING	6. PRIORITY	7. DATE REQUIRED	8. AMEND. NO.
	09/30/94			10/28/93 ST	BASIC

9. FROM NAVY PUBLIC WORKS CENTER SFB
P.O. BOX 24003, OAKLAND, CA 94623-1003

10. FOR DETAILS CONTACT: Betty Wallace
Tel #510 466-2411 /815/AV 859-2411

11. TO OFFICER IN CHARGE OF CONSTRUCTION
NAVY PUBLIC WORKS CENTER SFB
P.O. BOX 24003, OAKLAND, CA 94623-1003

12. MAIL INVOICE TO:
SAME AS BLOCK 11

13. ACCOUNTING DATA TO BE CITED ON RESULTING CONTRACTS

A. ACRN	B. APPROPRIATION	C. SUB-HEAD	D. OBJ CLASS	E. BU CONTROL	F. SA	G. AAA	H. TT	I. PAA	J. COST CODE	K. AMOUNT
AA	97X4930	NE1H	000	77777	0	068378	2F	000000	6837894RC049	5,075.00

14. AMOUNTS WILL NOT BE EXCEEDED IN THE OBLIGATION DOCUMENT WITHOUT PRIOR WRITTEN APPROVAL FROM THE ISSUER.

L. TOTAL THIS DOCUMENT	5,075.00
M. CUMULATIVE TOTAL	5,075.00

15. PROCUREMENT BY CONTRACT OF THE FOLLOWING ITEMS IS REQUESTED. THESE ITEMS ARE NOT INCLUDED IN THE INTERSERVICE SUPPLY SUPPORT PROGRAM AND REQUIRED INTERSERVICE SCREENING HAS BEEN ACCOMPLISHED.

A. ACRN	B. ITEM NO.	C. FSC	D. DESCRIPTION NAT. STOCK NO. SPEC. &/OR DRAWING NO. ETC.	E. QTY	F. UNIT	G. EST U. PRICE	ESTIMATED AMOUNT
			BASIC RCP ISSUED IN THE AMOUNT OF $5,075.00 TO COVER THE COST TO DISPOSE OF PIGEON EXCREMENT.				5,075.00
			CR# 11-286 10/28/93 THRU 9/30/94 JO# 1126730				

By acceptance of this document Contracting Officers are obligated to send a copy of the contract to each of the following: PWCSFB Comptroller Department (Code 151.3), the Fiscal Officer of the requiring activity, Requesting Official of the requiring activity and the Authorized Accounting Activity (AAA) of the requiring activity.

N68378-

16. SEE ATTACHED PAGES FOR DELIVERY SCHEDULES, PRESERVATION AND PACKAGING INSTRUCTIONS, SHIPPING INSTRUCTIONS AND INSTRUCTIONS FOR DISTRIBUTION OF CONTRACTS AND RELATED DOCUMENTS.

I. GRAND TOTAL 5,075.00

17. TRANSPORTATION ALLOTMENT (Used if FOB contractor's plant)

18. I CERTIFY THAT THE FUNDS CITED ARE PROPERLY CHARGEABLE FOR ITEMS REQUESTED.
AUTHORIZING OFFICIAL (Name, Title, Signature): T. D. ERQUID, DIRECTOR, GEN. ACCOUNTING DIV.
DATE 10/28/93

19. THIS REQUEST IS ACCEPTED AND THE ITEMS WILL BE PROVIDED IN ACCORDANCE HEREWITH.
ACCEPTING OFFICIAL (Name, Title, Signature)
DATE Oct 28

Figure 5 Request for Contractual Procurement

LIST OF REFERENCES

1. United States Code. Environmental Policy: Clean Air Act, as amended, 42 USC 7401 et seq. U.S. Government Printing Office, Washington, DC, 1955.

2. United States Code. Environmental Policy: Clean Water Act, as amended, 33 USC 1251 et seq. U.S. Government Printing Office, Washington, DC, 1972.

3. United States Code. Environmental Policy: Resource Conservation and Recovery Act (RCRA), as amended. 42 USC 6901 et seq. U.S. Government Printing Office, Washington, DC, 1976.

4. United States Code. Environmental Policy: Hazardous and Solid Waste Amendments of 1984 (HSWA). P.L. 98-616. 42 USC 6901 et seq. U.S. Government Printing Office, Washington, DC, 1984.

5. U.S. General Accounting Office. Hazardous Waste: Improvements Needed in DoD's Contracting System for Disposal of Waste. GAO Report GAO/NSIAD-91-131. U.S. General Accounting Office, Washington, DC, August 1991.

6. United States Congress. Congressional Budget Office. Federal Liabilities Under Hazardous Waste Laws. Washington: U.S. Government Printing Office, May 1990.

7. U.S. General Accounting Office. DoD Estimates for Cleaning Up Contaminated Sites Improved but Still Constrained. GAO Report GAO/NSIAD-92-37. U.S. General Accounting Office, Washington, DC, October 1991.

8. Department of the Navy. Office of the Chief of Naval Operations. Environmental and Natural Resources Program Manual. OPNAVINST 5090.1A. Washington, DC, October 1990.

9. United States Code. Environmental Policy. National Environmental Policy Act, 42 USC 4321 et seq. U.S. Government Printing Office, Washington, DC, 1969.

10. United States Army, Judge Advocate General. Environmental Law Deskbook, Volume 1. Charlottesville, Virginia, November 1992.

11. President of the United States. Executive Order 12088 of 13 October 1978. U.S. Government Printing Office, 1978.

12. Department of the Navy. Office of the Chief of Naval Operations. Navy/Marine Corps Installation Restoration Manual. Washington, DC, February 1992.

13. Schumacher, Aileen. A Guide to Hazardous Materials Management. New York, NY: Quorum Books, 1988.

14. United States Code. Environmental Policy: The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 USC 9601 et seq. U.S. Government Printing Office, Washington, DC, 1988.

15. United States Code. Environmental Policy, 42 USC 9600-9610. U.S. Government Printing Office, Washington, DC, 1992.

16. Code of Federal Regulations. Environmental Protection Agency, 40 CFR 262. U.S. Government Printing Office, Washington, DC, 1992.

17. Code of Federal Regulations. Federal Acquisition Regulation System, Title 48, part 13. U.S. Government Printing Office, Washington, DC, 1993.

18. Code of Federal Regulations. Federal Acquisition Regulation System, Title 48, part 10. U.S. Government Printing Office, Washington, DC, 1993.

19. Code of Federal Regulations. Federal Acquisition Regulation System, Title 48, part 15. U.S. Government Printing Office, Washington, DC, 1993.

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