Critique
by the Committee to Bridge the Gap
of the
Navy's Draft Five-Year Review
Hunters Point Naval Shipyard

7 September 2018

Introduction

Pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, also known as Superfund), the Navy is required every Five-Years to review the protectiveness of cleanup remedies at the Hunters Point Superfund site in light of current information and knowledge. At the core of this requirement is the recognition that new developments—e.g., evolving scientific findings about toxicity, tighter modern cleanup standards, discoveries of failures of cleanup actions taken at a site—can mandate going back and undertaking more cleanup in order to protect public health and the environment.

Unfortunately, the current Five-Year Review draft is woefully deficient. The problems are not merely inadequate and/or misleading content, but a failure to consider key matters that should be critical parts of such a Review. The deficiencies are thus not just with what it says, but what it doesn't. As is often the case, the key is the "dog that didn't bark." We discuss these problems below, and urge that the Review be completely redone and reissued for public comment.

Failure to Examine the Systemic Failure of the Cleanup Process Evidenced by the Tetra Tech Scandal

In the Five-Years since the last review, the fundamental integrity of the cleanup operation has been called into question. The Navy contractor responsible for most of the radionuclide measurements, Tetra Tech, has been alleged to have falsified much of those measurements. The US EPA and state regulators have estimated that 90-97% of the survey units in the parcels they have examined were subject to data fabrication and other fraud and questionable measurements. Only a tiny fraction (for Parcel G, just 3%) were found to be free of signs of falsification. Two Tetra Tech supervisors have pleaded guilty in federal court. One made clear in his plea agreement that he was under pressure from higher-ups to declare contaminated areas actually clean so as to avoid the need to remediate them.

The critical question arising from this scandal, described as one of the largest cases of environmental fraud in the country, is how high up does the problem go and how could it have gone on so long? At minimum, there was a complete breakdown in oversight by the Navy, as

well as the US EPA and state regulators. (Under CERCLA, the Navy is the lead for the cleanup and US EPA must sign off on all aspects of cleanup proposals for the site; additionally, there is a Federal Facilities Agreement that gives state agencies similar powers and responsibilities.) That systemic failure of oversight raises disturbing questions about the adequacy of cleanup actions throughout the Hunters Point Naval Shipyard (HPNS), past and future, not just the Tetra Tech work on radiation.

Even more troubling is the prospect that Tetra Tech's data fabrication was in response to signals, implicit or explicit, received from the Navy to cut corners wherever possible to reduce its cleanup obligations and associated costs. If this is true, then the work of other contractors, and not just on radioactive but also toxic chemical contamination, throughout HPNS may be similarly tainted. In either case—fundamental failure of oversight and/or actual signals sent to contractors to find ways to not clean up contamination that should have been—the systemic breakdown of the integrity of cleanup operation must be at the core of this Five-Year Review.

However, there is no consideration whatsoever of these fundamental issues in the draft Five-Year Review. The Tetra Tech scandal is barely mentioned; when it is referred to, in passing, it is without any assessment of the implications for the integrity of the overall cleanup. Instead, brief boilerplate language is included saying merely that the Navy will take care of the issue through radiation retesting. Not a word is included about the implications of the scandal for the adequacy of the cleanup process itself, because of systemic failures of oversight or, even worse, potential involvement of the Navy in pushing contractors to find ways around having to clean up that which should be cleaned up.

All of this is particularly troubling in light of the fact that the prior Five-Year Review was prepared by – Tetra Tech. Yet this most recent draft Five-Year Review relies heavily and uncritically on Tetra Tech's prior Review, and indeed, on dozens of other reports by Tetra Tech.

It is frankly rather stunning that the Navy could, after a national scandal that has brought the HPNS cleanup to a virtual halt, issue a Five-Year Review without examination of the implications of the scandal. That failure cripples the Review and portends serious problems for the cleanup ahead.

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Failure to Evaluate the Ancient Cleanup Standards Being Employed for Radionuclides at HPNS Against EPA's Current Preliminary Remediation Goals, Despite Express Direction from EPA to Do So

A key requirement of Five-Year Reviews under CERCLA is to analyze whether the cleanup standards chosen long ago are protective given today's standards and science. As the EPA describes the requirement, Question B for Assessing Protectiveness: "Are the exposure assumptions, toxicity data, cleanup levels, and Remedial Action Objectives still valid?"[1] Astonishingly, the Navy directly violates that requirement. No such analysis is provided for the radionuclide cleanup standards at HPNS—none.

This fundamental failure is even more remarkable in light of the express direction EPA has repeatedly given the Navy on this matter for HPNS. In its comments on inadequacies in the Navy's Parcel G retesting plan, EPA stated that a "new Radiation Risk Assessment [needs to be performed] as part of a Five-Year Review to evaluate whether or not the original RG's [Remediation Goals] are still protective" and noted that it "has separately recommended that the Navy conduct this review, and, if any of the RGs are found to be no longer protective using the most current risk calculators, propose amendments to the Parcel G ROD [Record of Decision] to ensure protectiveness."[2] EPA further stated that:

> The HPNS's Five-Year Review occurring in 2018 is evaluating whether the current selected remedies, including these ROD RGs, are still protective and whether any changes are necessary to ensure continued protectiveness. Based on national practices directed by EPA headquarters, EPA expects this process to use the most current version of the EPA Preliminary Remediation Goal (PRG) Calculator and Building PRG Calculator to assess the ROD radiological RGs. The Work Plan should use only those cleanup goals confirmed through this analysis to be protective.[3]

Despite EPA's expectation and direction that the 2018 Five-Year Review would, as required, evaluate whether the HPNS remediation goals for radioactivity were still protective, utilizing EPA's PRG Calculator (for soil) and Building PRG Calculator,[4] the Navy has simply refused to do so. The Navy has similarly refused to honor commitments to EPA and the state regulators regarding the retesting of Parcel G, as documented in their letters on that subject, resulting in the extraordinary threat by EPA to have to invoke dispute resolution procedures in the Federal Facilities Agreement and by the state agencies to refuse to certify acceptability of the site for release.[5] This repeated refusal by the Navy to follow direction from its regulators, even in the

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[1] EPA, *Five-Year Review Process in the Superfund Program*, April 2003, p. 5
[2] *EPA Review of the Navy June 2018 Draft Parcel G Removal Site Evaluation Work Plan*, p. 3
[3] ibid., p. 6
[4] The only reference to PRGs in the draft Five-Year Review is in the glossary, raising the question whether an earlier draft actually included a comparison of HPNS standards to the PRGs and someone intervened to have it removed.
[5] Letters of August 14 2018, from Angela Herrera, EPA, to Lawrence Lansdale, Navy, and from Mohsen Nazemi, DTSC, to Laura Duchnak, Navy.

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face of a major scandal involving the cleanup, is extraordinary and places the entire remediation effort in question.

Under CERCLA, "No department, agency, or instrumentality of the United States may adopt or utilize any such guidelines, rules, regulations, or criteria [for cleanup of a Superfund site] which are inconsistent with the guidelines, rules, regulations, and criteria established by the [EPA] Administrator." As indicated in the quote from EPA's letter to the Navy above, for radionuclide cleanups at Superfund sites, EPA has established that the guidelines to be used are the PRG calculators for soil and buildings. The Navy was supposed to compare the radionuclide cleanup standards it has been employing at HPNS against the EPA PRG calculators to determine protectiveness. The Navy has simply refused to do this, raising the suspicion that the reason for its refusal to perform the Five-Year Review on this matter as required is that the resulting evaluation would demonstrate the gross inadequacy of the outdated cleanup standards it has long utilized.

The Navy has been using the Atomic Energy Commission's Regulatory Guide 1.86 for its remediation goals for buildings. The AEC is no longer in existence; the Reg. Guide is forty-four years old and was never based on health or risk, but rather on what hand-held instruments in the 1960s could easily detect. As indicated above, under CERCLA, the Navy is not supposed to use that Reg. Guide but instead EPA's Building PRG Calculator. When one runs that EPA calculator, one discovers that the Navy cleanup levels for buildings at HPNS are frequently *thousands of times less protective* than the EPA Building PRGs. Indeed, the EPA BPRG Calculator estimates risks from the Navy cleanup levels thousands of times higher than EPA's primary risk goals and tens of times higher than the absolute upper limit EPA allows. If the required runs had been performed, they would show that the cleanup levels for buildings at HPNS are not protective. Radioactive wastes sent for recycling and disposal at sites other than licensed radioactive waste disposal sites based on these inadequately protective standards would potentially also be at risk, and that matter should be examined in the Review.

Similarly, although the Navy claims to have been using cleanup levels for soil derived from EPA's PRGs, in fact it is using PRGs from 1991, more than a quarter of a century old, rather than current ones. When using the current PRGs, Navy cleanup levels would appear to be in many cases hundreds of times weaker than the EPA PRGs, with risks exceeding even the upper range of EPA's required risk range.

One must ask whether the Navy's refusal to perform the mandatory protectiveness analysis for the old radiation cleanup standards being employed at HPNS is to avoid disclosing these disquieting facts. Given the troubling conduct to date, it is possible that even had such an analysis been performed, the Navy would have altered the defaults for the EPA PRG Calculators in a way to provide a more desired outcome. But then those questionable alterations would be subject to scrutiny in the public review period as well.

The bottom line is that the Navy's radiological cleanup standards are outdated, are far beyond those that the EPA PRG Calculators would identify, and exceed not just the stated risk goal but even the upper limit of acceptable risk. The Navy needs to revise the Five-Year Review to include the required evaluation of the HPNS radiological cleanup standards, using the EPA PRG

Calculators, without questionable alternations of inputs, and re-release the Review for public review and comment.

Failure to Include Parcel A in the Five-Year Review at All

Parcel A, where people already live, is at the center of concern at HPNS. The Navy decided long ago to simply *declare* most of the parcel non-impacted and therefore not perform any soil testing on most of it, with only a few buildings tested at all. While, contrary to the claim in the Five-Year Review, there appears to have been some limited cleanup in Parcel A, the basic Navy decision was to neither test for nor remediate contamination there.

This has proven very contentious. The California Department of Public Health (CDPH) is at this moment conducting a controversial limited gamma scan of part of the Parcel, using walk-over and driver-over scanning equipment that cannot alpha- or beta-emitting radionuclides and even for gamma-emitters, cannot see most if not all of the gamma radionuclides at the cleanup levels (levels, which as discussed above, are themselves far too high.)

In light of this history, it is inexplicable that the Navy should choose to exclude any evaluation whatsoever of Parcel A in the draft Five-Year Review. Decisions to not test and to not clean up are at the core of evaluating the protectiveness of what has and has not been done for Parcel A. The protectiveness determination is designed to ascertain whether what has *not* been cleaned up may pose an unacceptable risk to the public and/or the environment. Virtually nothing has been cleaned up in Parcel A, and the basis for that decision is extremely flimsy based on current knowledge. Essentially the Navy based it on whether it could find records of radionuclide use in particular buildings in the Parcel, ignoring completely the prospect for contamination from other polluted areas of HPNS migrating to Parcel A (e.g., windblown contamination from decontaminating radioactive ships brought to HPNS from the nuclear tests in the Pacific). Parcel A needs to be included and an honest assessment conducted of the improper assumptions previously used to decide to not test or clean up the Parcel.

Drastically Reduced List of Radionuclides of Concern

The Review also completely fails to perform any evaluation of the silent decision to dramatically decrease the list of HPNS radionuclides of concern from their original number in the 2004 Historical Radiological Assessment (HRA) of about 100 (33 long-lived), to a mere 3 or 4 in various RODs and the Parcel G retesting plan. No testing is occuring for the rest, and they are allowed unlimited contamination levels. The rationale for this decision remains unsupported, seems similar in effect to the data fabrication by Tetra Tech to markedly reduce cleanup obligations by simply ignoring contaminatin, and should be subject to evaluation under the Five-Year Review. Many radionuclides persist for centuries, and thus, if a radionuclide were of concern fifteen years ago, there is no reason it should now be omitted from the scope of the cleanup, other than to reduce costs born by the Navy.

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Manipulated Background Values

In the EPA review of the Navy June 2018 Draft Parcel G Work Plan, the EPA noted the Navy's questionable approach in selecting background values. It also remarked on the failure to include key data, tables, and reports which would validate the background values being employed in the Parcel G retesting. We similarly identified the incomprehensible decision to choose as background locations a building acknowledged to be impacted and, for soil, locations almost exclusively in the midst of the contaminated Superfund site. These practices violate the fundamental requirements for choosing background locations that cannot be affected by the contamination one is trying to assess.

However, this inadequacy is not a one-off exclusive to Parcel G retesting. In fact, the deficient and misleading strategy for selecting background locations and ultimately values has remained consistent throughout the HPNS cleanup, and therefore these same problems are woven throughout remedial and removal work taken place across the site. Despite this, the Navy excludes from evaluation in the Review any consideration of its faulted approach in selecting background locations. This is unacceptable. The EPA gave a direct request for the Navy to re-evaluate their strategy for selecting background values, and we have pointed out additional issues; they are of great importance because they form they very foundation by which a clean up is built upon—if background values are inflated, the entire cleanup loses integrity. Therefore, the Navy should place its methods for selecting background under review.

90% of HPNS Arbitrarily Removed from Scope of Measurements and Cleanup

The decision to eliminate 90% of HPNS sites from even consideration for cleanup has never been evaluated or given the explanation that it necessitates, based on current information showing such a decision to be highly questionable. The HRA designated only one tenth of the HPNS sites as having the potential to be impacted, arbitrarily asserting that the rest had no possibility for contamination. Since the past activities of HPNS as well as the various migration pathways present at the site indicate the great potential for the entire site to be contaminated, it remains unclear how a set of incomplete historical documents are sufficient to designate the vast majority as having no contamination. It is even more questionable that this assertion was never reinforced with any substantive quantitative data/measurements. The assertion that the majority of the site is not in need of testing let alone remediation has not been evaluated in light of current information.

Not only does the draft Five-Year Review completely omit key aspects of the cleanup from evaluation, the issues it does touch upon are largely glazed over in a nonchalant manner, lacking any critical examination. This is observed in the following points:

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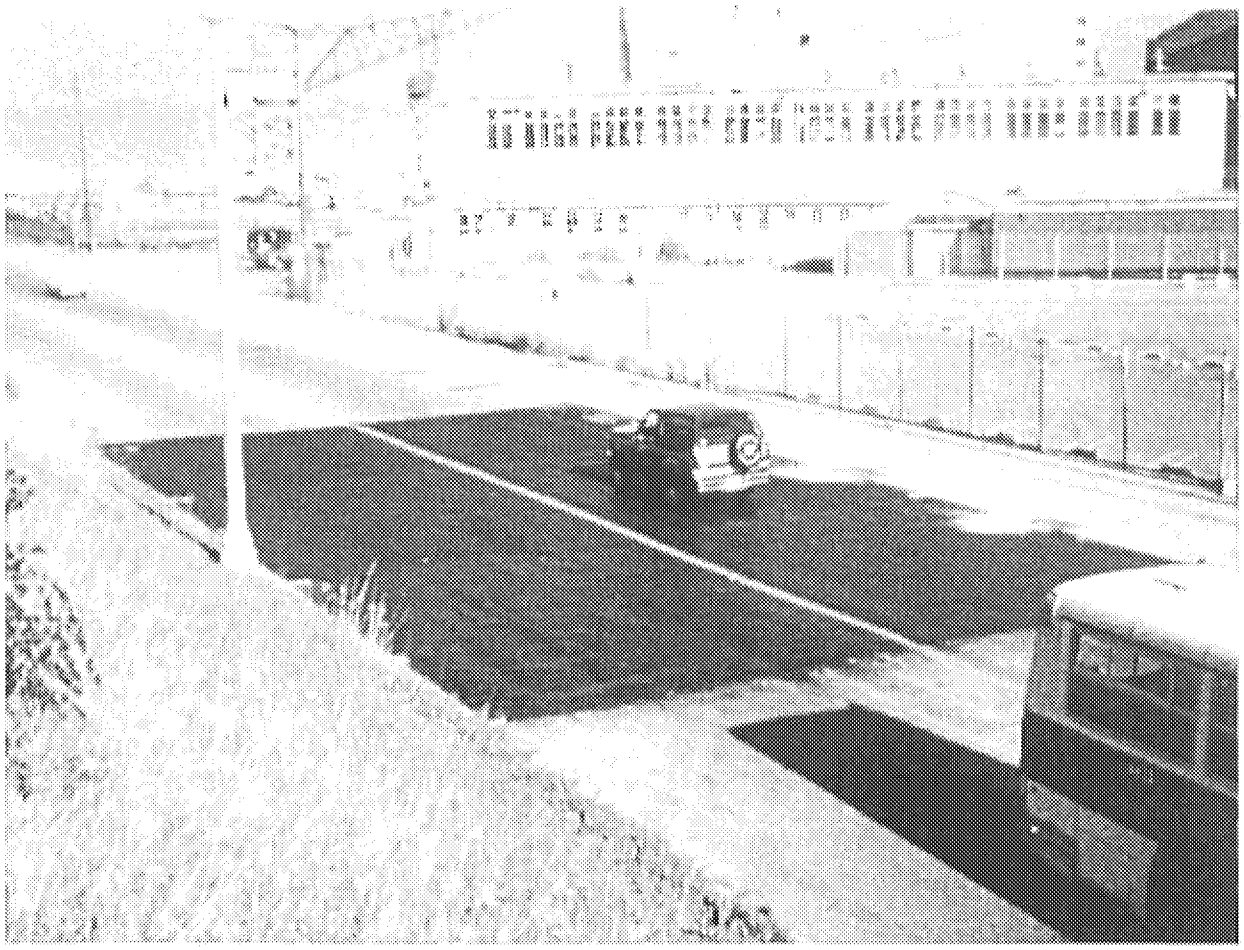
Radioactive Sandblast Grit

Sandblast grit, from sandblasting scores of contaminated ships from the nuclear testing in the Pacific to decontaminate them, is one of the primary mechanisms of pollution at HPNS. However, there remain questions regarding how much sandblast grit was produced at HPNS, how much has been questionably recycled, how much remains on site and how much placed elsewhere offsite, and the environmental impacts that can follow. This Review does not examine those questions. The only mention of Sandblast grit recycling in the Five-Year Review is the following statement, "[b]etween 1991 and 1995, the Navy collected nearly 5,000 tons of sandblast grit from multiple areas at HPNS. The material was sent to an asphalt plant for reuse in an asphalt mix."(page 3-1). This brief utterance fails to disclose that some of the asphalt was brought back to the site to be used to produce and install asphalt with the contaminated grit.



Asphalt at HPNS made out of HPNS sandblast grit

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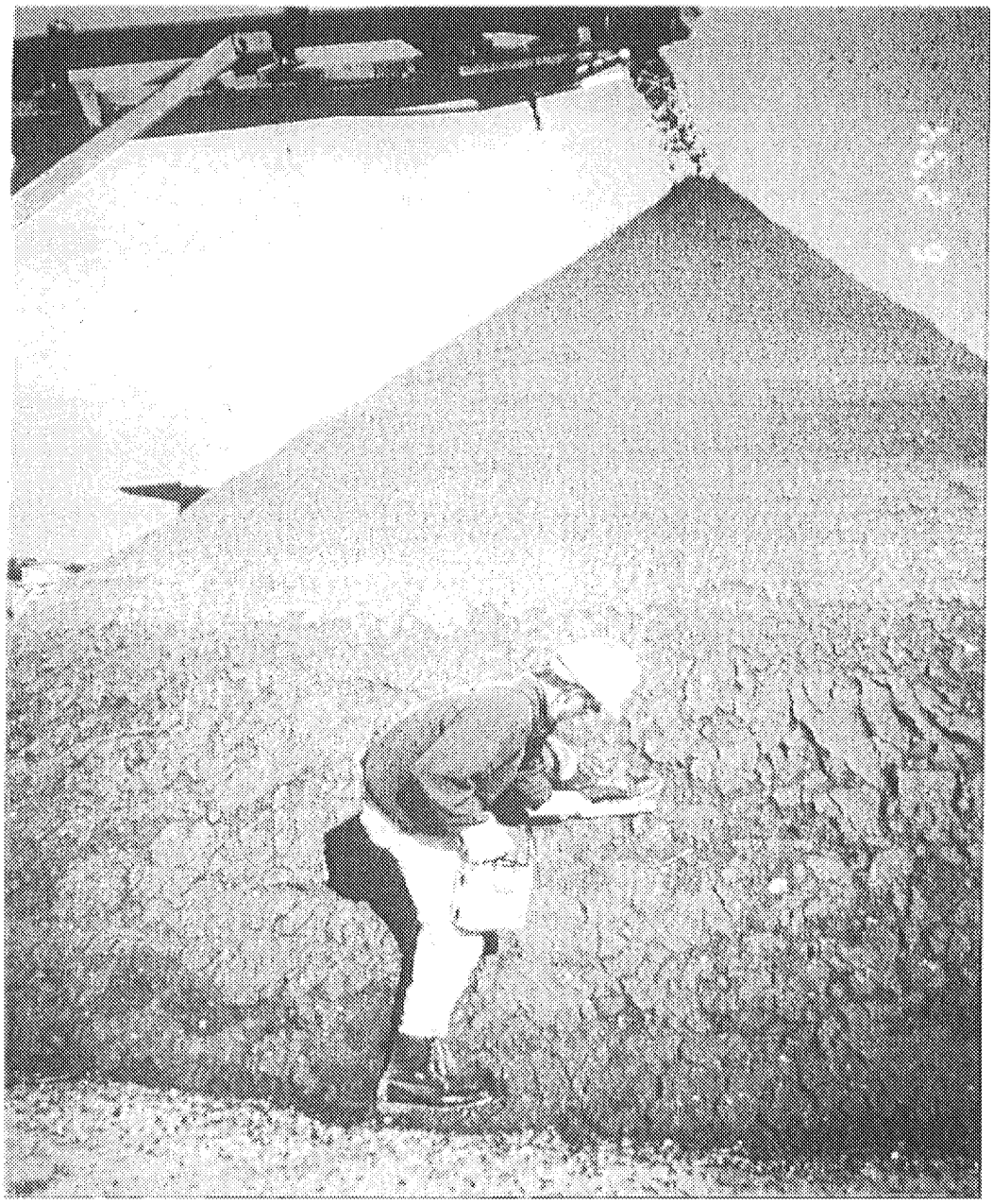
Other documents indicate that large amounts of additional potentially contaminated grit was sent to the Central Valley to be made into asphalt for use there.[6] The method for determining whether there was radioactivity in the sandblast grit (and subsequent asphalt) appears primitive at best – a handheld Geiger-counter type device that is unlikely to be able to detect radionuclides at the level of concern.



Hand-held radiation scan of sandblast grit prior to use in asphalt

[6] Field Demonstration Report on Recycling Spent Sandblasting Grit Into Asphaltic Concrete, Battelle, January 11, 1996

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There is no consideration in the Five-Year Review of the protectiveness or danger of either the HPNS asphalt or Central Valley asphalt made with potentially contaminated sandblast grit.

Navy Further Weakening an Already Inadequate Remedial Method

Section 7 of the Review, the "*Issues, Recommendations, and Other Findings*" is stunningly short. One of the three issues that is brought to light, however, is a remarkable disclosure: the inability for soil vapor extraction (SVE) to effectively reduce source mass of volatile organic carbons (VOCs) due to the conditions in the subsurface of the soil. It is then simply asserted that unspecified Institutional Controls (ICs) will compensate for this inadequacy and "maintain future protectiveness." The ICs the Navy plans to implement in lieu of any actual remediation is restricting contained buildings along with "engineering requirements."

However, the second issue in section 7 which immediately follows discloses that the regulatory agencies are in disagreement with the Navy's decision to *decrease* the amount of areas requiring institutional controls (ARICs) by using risk assessment assumptions the regulators find inaccurate. Therefore, the Navy is both relying on ICs on the one hand and reducing the area for which they deem ICs necessary, by way of a manipulated risk assessment, all because the original remedy of actually cleaning up the VOCs isn't working. How exactly this combination will protect human health is dubious, and should be further examined in the final review.

Heavy Reliance on ICs and Questions About Their Protectiveness

ICs, as briefly addressed in the previous point, are replacing genuine remedial actions such as excavation and removal of contaminated media. Large portions of HPNS have had amendments to their RODs which allow for a significant decrease in excavation and cleanup on the pretense that ICs will compensate. However, the large amount of contaminated land no longer to be cleaned up and the questionable ICs being implemented in the place of cleanup have yet to receive in depth evaluation in light of current knowledge to determine that they are truly protective of human and environmental health. The template for a Five-Year Review, provided by the Navy, calls for an IC Summary Table, shown below, to be included if "ICs have been selected in a ROD or amended ROD, or modified in an ESD." There is no such table in the Five-Year Review, and considering the great amount of contaminated HPNS land for which cleanup is being abandoned and ICs assumed instead, it is sensible that such an analysis be included so as to provide further information and evaluation, which is currently greatly lacking.

IC Summary Table *(Optional – Include if ICs have been selected in a ROD or amended ROD, or modified in an ESD[1])*

Table X: Summary of Planned and/or Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Media (e.g., groundwater, soils, sediments)	Choose an item	Choose an item	Parcel # or other identifying information	Use restriction or notice provided by the IC (e.g. restrict installation of ground water wells and ground water use).	Instrument title (e.g. Declaration of Restrictive Covenants, June 2003)

"Ubiquitous" Doesn't Mean Don't Clean Up

The amount of contaminated soil being excavated that contain chemicals of concern (COCs) has been greatly in much of HPNS, for example in Parcel B, because the contaminants have been written off as "ubiquitous." The Five-Year Review allows for one sentence in a table on the matter (Table 2). It is stated, however, in the Amended ROD for Parcel B that:

> "The Navy acknowledges that industrial sources of metals exist at HPNS and that there is a potential that some concentrations of metals could have sources other than naturally occurring materials. The Navy has worked to remove these sources during the response actions taken to date. The Navy further acknowledges that the **regulatory agencies do not agree with the Navy's position** that ubiquitous metals are naturally occurring."
>
> (emphasis added)

It appears that as a way to circumvent the extensive excavation and removal of contamination that is necessary, the Navy is strategically maneuvering around its responsibility by claiming the contamination comes from the dangerous fill material it brought in. Just because there is a lot of something, doesn't mean it's natural or safe; in this case, it confirms the suspected notion that negligent activities by the Navy resulted in extremely widespread contamination. What the Navy is doing is manipulative, and the regulatory agencies don't buy it. And yet, the entire subject is excluded from any evaluation in the review. The Navy shouldn't be allowed to *not* clean something up because there is a lot of it. In writing off widespread contamination as ubiquitous, ICs are widely being implemented in lieu of excavation. In fact, only COC "hot spots" are eligible for excavation. A "hot spot" is defined as an area where contamination is detected at **five or ten times** the remediation goals (RGs). Since RGs are already greatly inflated, only excavating soil that exceeds five times that is allowing for the vast majority of the contamination to persist. This too, is excluded from any review.

Soil and Asphalt Covers

One variant of an IC is a cover, comprised of either soil or asphalt. The soil covers, which are only 2 or 3 feet thick, are meant to cover the radioactively or chemically contaminated soil which stays in place just beneath them. Substantive evaluation of these covers, as in their effectiveness in protecting human and ecosystem health, their lifespan, and their potential failures long-term is not addressed in the review. Evaluation of soil covers is limited to a statement which states that, holes, animal burrows, and failed revegetation attempts have been observed. It is then asserted without basis that such problems would not compromise the protectiveness of the cover. There is no analysis of whether just covering up rather than contamination is truly protective, particularly over the lifetime of the contaminants, based on the most current information.

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Conclusion

The draft Five-Year Review is fundamentally flawed, both in its content and in what it has failed to include. It should be redone to correct these serious problems and reissued for review and comment by the public and the regulatory agencies.