N00236.000002
ALAMEDA POINT
SSIC NO. 5090.3

FACSIMILE

To: Mindy Gould + Mike McClelland
Fax #: 847-255-8528 619-532-0983
Re: Marsh Crust RAP/ROD Comments
Date: ~~July 20, 2000~~ July 24
Pages: ~~14~~, including this cover sheet.
34

cc: Rex Galloway
AR - Diane Silva
3 - copies

From the desk of...

Mary Rose Cassa, R.G.
Office of Military Facilities - Berkeley Office
Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, CA 94710-2721

510-540-3767
Fax: 510-849-5285

CLEARWATER REVIVAL COMPANY
305 Spruce Street
Alameda, CA 94501
(510) 522-2165
FAX (510) 522-8520
email: clearwater@toxicspot.com

98-3007-00

July 20, 2000

Mr. Michael McClelland
EPA-Southwest
1230 Columbia Street
San Diego, CA 92132

Ms. Rosemary Cassa
Department of Toxic Substance Control
700 Heinz Avenue, Suite 200
Berkeley, CA 94710-2737

Comments
Remedial Action Plan/Record of Decision
for Marsh Crust and Sub-tidal Wetlands
Alameda Point Naval Air Station

Dear Mr. McClelland and Ms. Cassa:

On behalf of West End Concerned Citizens, CRC completed a review of the following Navy document:

> Tetra-Tech Environmental Management, Inc., "Remedial Action Plan/Record of Decision for the Marsh Crust and groundwater at the Fleet Industrial Supply Center Oakland, Alameda Facility/Alameda Annex, and for the Marsh Crust and Former Subtidal Area at Alameda Point," prepared for Department of the Navy, June 20, 2000.

Since 1995, West End Concerned Citizens has encouraged the US Navy to adequately address health and environmental hazards in our community without meaningful results. West End Concerned Citizens has also encouraged Cal-EPA and the US EPA to provide "fair treatment" in regulatory enforcement, and cleanup decisions also without success.

The Remedial Action Plan and Record of Decision (RAP/ROD) that is the subject of CRC's comments, further demonstrates the Navy's unwillingness to address in a meaningful way the contamination the US Navy has caused. Cal-EPA and the US EPA have acted contrary to their agencies' mission, policies, and regulations by allowing this 700 acre uncontrolled hazardous waste property to continue to poison residents and wildlife.

Undermining the credibility of the US Navy, Cal-EPA, and US EPA, as much as the unwillingness to address significant contamination, is the quality of the technical documents on which the US Navy, Cal-EPA, and US EPA have based their decision. Despite being reviewed and approved by the US Navy, Cal-EPA, and US EPA, these technical documents remain ripe with inaccuracies, inconsistencies, and unsubstantiated opinions.

Each of the following comments refers to the Negative Declaration, Remedial Action Plan and Record of Decision (RAP/ROD). The 39 comments have been organized into topics which include:

- Community Acceptance
- Previously submitted comments
- Scope of the Marsh Crust Remedy
- Contamination in the Marsh Crust/Subtidal Area
- Remedial Action Objectives
- Proposed Remedy
- Summary of Site Risks
- Marsh Crust Ecological Assessment
- Groundwater Ecological Assessment

The following paragraphs detail CRC's concerns with the RAP/ROD and supporting documents contained in the administrative record:

COMMUNITY ACCEPTANCE

Comment No. 1 Alternative Evaluation Criteria

I am a resident who lives less than 75 feet from the marsh crust boundary shown in Figure 4 of the RAP/ROD.. As a community member who is adversely effected by this contamination I find the proposed remedy as unacceptable. I also believe it is inappropriate to select one of the three billion dollar cleanup alternatives without an adequate investigation of the contamination.

Please revise the Marsh Crust Feasibility Study and RAP/ROD to indicate the communities disappointment with the effectiveness of the marsh crust and groundwater remedy, Cal-EPA's regulatory oversight, and the US Navy's often incompetent environmental analyses.

PREVIOUSLY SUBMITTED COMMENTS

Comment No. 2: Disrespect for Residents of the surrounding community

Attached our two letters containing comments related to the RAP/ROD's administrative record contents. These comments prepared on the Feasibility Study were previously submitted to the US Navy on March 19, 1999 and February 17, 2000, but have been completely ignored to date. CRC by providing comments early, enabled the US Navy to consider these comments during, rather than at the end of the remedy selection process. These comments enabled the US Navy to consider community acceptance during the completion of the Feasibility Study.

As further example of the disrespect the US Navy has for residents and the environment we live in, the US Navy has chosen to needlessly delay addressing these comments until the RAP/ROD comment period. Please now address each of the individual comments in the two attached letters.

SCOPE OF MARSH CRUST REMEDY

Comment No. 3: Clarify Boundaries of the Marsh Crust Remedy

According to the Remedial Action Plan/Record of Decision (RAP/ROD):

> "The RAP/ROD selects the final remedy for the marsh crust at Alameda Facility/Alameda Annex and Alameda Point and the Former subtidal area at Alameda Point.."[1]

> "Figure 4 shows the boundary of the subtidal area and tidal marshland at Alameda Facility/Alameda Annex and Alameda Point."[2]

Figure 4 shows the historical marsh, or the area that the US Navy, US EPA, and Cal-EPA have agreed is the boundary of the marsh crust contamination. The US EPA, US Navy, and Cal-EPA, however, have no intention of applying the proposed RAP/ROD remedy to the entire area of marsh crust contamination. The area of Marsh Crust contamination shown on Figure 4 beneath Woodstock Elementary School, Alameda Head Start, College of Alameda Day Care Center, City of Alameda Little League Fields, Woodstock Public Park, Neptune Public Park, and Poggi Street residences are not within the scope of the RAP/ROD remedy. Navy property

The US EPA, US Navy, and Cal-EPA apparently all agree that different standards of human health protection are appropriate at this time for different areas of the marsh crust contamination. Figure 4 of the RAP/ROD should be revised to accurately depict the areas of the marsh crust contamination where existing and future residents will be entitled to the protections that the RAP/ROD remedy provides. Figure 4 of the RAP/ROD should also be revised to accurately depict the areas of marsh crust contamination that will be specifically excluded from the protections provided by the RAP/ROD remedy.

---

[1] RAP/ROD, p. 2-6
[2] RAP/ROD, p. 2-9

Comment No. 4: Extent of Marsh Crust/Croundwater Contamination

The RAP/ROD should be revised to include a table listing the borings that where used to determine the lateral extent of the marsh crust/subtidal area contamination.

Similarly, the RAP/ROD should be revised to include a table listing the monitoring wells used to establish the extent of groundwater contamination at the FISC/Annex.

Comment No. 5: Northern Boundary of Subtidal Area

The northern boundary of the Subtidal Area shown on Figure 4 has been drawn to exclude areas of Alameda Point that have been designated under the Community Environmental Reuse Facilitation Act (CERFA) to be "free of contamination." Despite this designation, a report from a City of Alameda public works project at Alameda Point indicates that the area is not free from contamination.

> Granulated asphalt, sand and soil with free-phase product, and product discolored soil were observed in the three borings from approximately 8 to 12 feet bgs. Since these materials were found in contact with first-encountered groundwater and were overlain by approximately 8 feet of compacted soil, baserock, and gravel, it appears they were purposefully placed during bay margin filling and land reclamation activities.[3]

Figure 4 of the RAP/ROD should be revised to show that the northern boundary of the marsh crust/subtidal contamination includes the CERFA parcels and extends to the Oakland Estuary.

Comment No. 6: Seaplane Lagoon

The Subtidal Area shown on Figure 4 extends into the Seaplane Lagoon. The results of radiological dating of sediments in the Seaplane Lagoon was provided at the July 1999 Alameda Point Restoration Advisory Board Meeting.[4] The results indicate a layer of contamination, with similar characteristics to the marsh crust, was deposited in sediments in the Seaplane Lagoon during World War II.

Figure 5 shows the depth to the top of the former subtidal area within the Seaplane Lagoon. The RAP/ROD states the opinion that the contamination

[3] ACC Environmental Consultants, 1999, "Stockpiled Soil Profiling Report, Main Street Pup Station, Alameda, California" prepared for City of Alameda, April 26

[4] Gutierrez-Palmer, Inc., 1999, "Alameda Point Restoration Advisory Board Meeting Minutes, July.

in the subtidal area occurred from 1880-1920. This statement in the RAP/ROD appears to contradict the results of the Seaplane Lagoon Sediment dating.

A figure should be included in the Final RAP/ROD showing a cross section that relates the subtidal contamination layer depicted in Figure 4 and Figure 5 of the RAP/ROD with the layer of World War II contamination reported at the July 1999 RAB meeting. This figure would distinguish between the marsh crust contamination layer that is excluded from the Superfund boundaries and the Seaplane Lagoon contamination that is not.

Comment No. 7 Responsible Parties

Property impacted by marsh crust contamination has been transferred to the City of Alameda. The Record of Decision, however, is prepared solely by the US Navy under CERCLA authority granted by Executive Order No. 12580. The US Navy's CERCLA authority can only be exercised on property they do not own, if the US Navy is solely responsible for the contamination. The RAP/ROD should be revised to remove references to other polluters besides the US Navy, or the RAP/ROD should be prepared jointly by the City of Alameda and US Navy under the CERCLA authority of the US EPA.

CONTAMINATION IN MARSH CRUST/SUBTIDAL AREA

Comment No. 8 Historical Contamination Investigation

The RAP/ROD concludes that:

> "Based on available lithologic data the marsh crust appears as a discontinuous layer approximately 6 inches thick located intermittently between 10 to 20 feet bgs."[5]

The thickness of a contamination layer is normally determined by chemical sampling. Together observations on lithologic logs and chemical analyses indicate that the marsh crust contamination layer is consistently thicker than six inches. The results of the historical contamination investigation indicate that the marsh crust contamination is 2.5 to 6.5 feet thick in borings were it is found.

S41	no evidence of marsh crust contamination
S43	greater than 2.5 feet thick (odor 14.0-16.5 bgs)
S45	greater than 6.5 feet thick (odor 12.0 to 18.5 bgs)
S46	greater than 5.0 feet thick (sheen 14.0 bgs)
S47	greater than 2.5 feet thick (samples at 14.5 bgs and 16.5 bgs)

[5] RAP/ROD, p. 2-8

Comment No. 9: FISC/Annex Borings

The RAP/ROD indicates that:

> 57 wells or boreholes extend to depths exceeding 10 feet were installed at Alameda Facility/Alameda Annex. Thirty-seven of the 57 wells or boreholes encountered the interface between the bay mud and fill soil where the marsh crust is expected to be found.[6]

To the contrary, 97 wells and boreholes were drilled to depths exceeding 10 feet. As shown in Table 1, 61 of the 97 wells or boreholes encountered the interface between the bay mud and fill soil.

TABLE 1: Boring Log Summary, Depths Greater than 10 Feet
FISC/Annex Remedial Investigation Report

BORING ID	MARSH CRUST DEPTH (ft)	BORING DEPTH (ft)	BORING ID	MARSH CRUST DEPTH (ft)	BORING DEPTH (ft)
A008	18.0	21.5	MW7	18.5	20.0
A005	18.0	21.5	S01	not found	19.5
A006	17.0	21.5	S02	17.0	19.5
A007	18.0	19.5	S03	17.5	19.5
A009	23.0	26.5	S04	not found	17.0
A010	18.0	21.5	S05	not found	14.5
A011	18.0	20.5	S06	not found	15.0
A012	not found	19.5	S07A60	12.0	16.0
A013	17.5	21.5	S08	11.0	14.0
A014	18.0	21.5	S09	11.0	14.0
A015	18.0	21.5	S10	not found	14.0
A016	18.0	20.5	S11	not found	14.0
A017	17.0	20.5	S12	20.5	21.5
A018	20.5	21.5	S13	not found	14.0
A019	18.0	21.5	S14	17.0	19.0
A020	not found	21.5	S15	19.0	20.5
A021	19.0	21.5	S16	not found	14.0
A022	not found	21.5	S17	not found	14.0
A023	20.0	21.5	S18	not found	14.0
A024	20.0	20.5	S19	not found	14.0
A025	19.0	20.5	S20	not found	15.0
A026	19.0	20.5	S21	not found	15.0
A027	19.0	20.5	S22	not found	14.0
A028	19.0	20.5	S23	16.0	21.0
A029	19.0	25.5	S24	18.0	22.0
A030	19.0	22.0	S25	17.5	22.0
A031	20.0	21.5	S26	17.5	20.5
A032	not found	21.5	S27	not found	15.0

[6] RAP/ROD, p. 2-8

TABLE 1: Boring Log Summary, Depths Greater than 10 Feet
FISC/Annex Remedial Investigation Report (continued)

BORING ID	MARSH CRUST DEPTH (ft)	BORING DEPTH (ft)	BORING ID	MARSH CRUST DEPTH (ft)	BORING DEPTH (ft)
A033	15.0	21.5	S28	not found	20.5
A034	20.0	21.5	S29	not found	14.5
A035	not found	20.5	S30	not found	15.0
A036	15.0	21.5	S31	not found	14.0
A048	not found	10.0	S32	19.5	20.5
A054	not found	14.0	S33	15.5	15.5
A058	9.0	10.5	S34	20.0	23.5
A069	8.5	11.5	S35	22.5	23.0
A070	not found	11.0	S36	not found	13.5
A086	not found	10.0	S37	not found	13.5
A103	not found	10.0	S38	not found	13.0
A111	16.5	18.5	S39	not found	13.0
EW1	not found	15.0	S40	not found	13.0
EW2	15.0	20.5	S41	not found	20.0
EW3	15.5	18.5	S42	8.0	14.5
MW1	18.5	25.0	S43	16.5	18.5
MW2	18.5	20.0	S44	22.0	25.0
MW3	18.0	22.0	S45	17.0	18.5
MW4	16.5	20.0	S46	19.0	20.0
MW5	18.5	20.0	S47	17.0	19.0
MW6	18.5	20.0			

Comment No. 10: FISC/Annex EBS Parcel 5

A benzo(a)pyrene concentration of 140 mg/kg was reported in soil sample P05-03 collected at 1.0 feet bgs. This contamination is not located at a depth that would prevent human exposure. The RAP/ROD should be revised to include a cross-section that shows contamination found at Parcel 5 is unrelated to the marsh crust contamination which is reportedly too deep and immobile to create the potential for exposure.

Comment No. 11: Alameda Point IR Site 25

IR Site 25 at Alameda Point contains significant benzo(a)pyrene and pentachlorophenol contamination. The shallow contamination depths at IR Site 25 do not prevent human exposure. The RAP/ROD should be revised to include a cross-section that shows contamination found at IR Site 25 is unrelated to the marsh crust contamination.

Comment No. 12: Alameda Point Underground Storage Tank Removals

Over the past 6 years over 100 underground storage tanks (USTs) have been removed from Alameda Point. A majority of these tanks were located in the marsh crust and subtidal area. USTs are normally installed to depth of over 12 feet bgs. The marsh crust contamination is at an average depth of 8 feet at Alameda Point.

The RAP/ROD should be revised to include a table showing the depth of each UST excavation and the corresponding depth of the marsh crust contamination at that location. If the marsh crust was encountered the RAP/ROD should provide the depth and concentration of PAHs that were found. The RAP/ROD should also be revised to include information on how the PAH impacted soil removed from the UST tank excavation was disposed of in accordance with RCRA regulations.

REMEDIAL ACTION OBJECTIVES

Comment No. 13: Specify Individual Contaminants of Concern

Contaminants in the marsh crust are collectively referred to only as semi-volatile organics in the RAP/ROD. Boring logs indicate that hydrogen sulfide, an acutely toxic gases, is found throughout the marsh crust. Chemical analysis of soils from the marsh crust showed the presence of benzene and other volatile aromatics. A table listing each of the semi-volatile organics and other contaminants found in the marsh crust, should be provide in the RAP/ROD.

Groundwater sampling at the FISC/Annex also shows that in addition to benzene, the shallow groundwater contains separate phase hydrocarbons, volatile aromatic hydrocarbons, oxygenated solvents, chlorinated hydrocarbons, polynuclear aromatic hydrocarbons and cyanide.

The RAP/ROD should be revised to specifically identify the chemical contaminants of concern in both the marsh crust and groundwater for which remedial action objectives have been established.

Comment No. 14: Specify Exposure Route/Receptors for Marsh Crust

The RAP/ROD identifies future construction work which may bring marsh crust contamination to the surface as the only exposure route that may result

in an unacceptable risk to human. The exposure routes and potential receptors would therefore include:

Inhalation of Dust	Residents, employee, construction worker
Contact with Soil	Residents, employee, construction worker
Wind Dispersion	Wildlife, Subsistence Fisherman
Stormwater Runoff	Wildlife, Subsistence Fisherman

Please revise the ROD/RAP to include a list of all exposure paths that the remedial action objectives are attempting to address.

Comment No. 15: Specify Exposure Route/Receptors for Groundwater

The RAP/ROD also identified incidental contact with groundwater for an extended period of time, or a failure to construct wells in accordance with current construction standards as the only potential routes of exposure. Neither groundwater flow into the Oakland Estuary nor volatilization of contaminants into buildings was considered a significant exposure route based on modeling results. The proposed RAP/ROD remedy for groundwater also identifies discharge of groundwater to surface waters as a potential route of exposure. In addition to the intentional discharge of contaminated groundwater to storm drains, infiltration of groundwater through storm drain pipelines is also an existing and significant exposure pathway.

The exposure routes and potential receptors would therefore include:

Discharge to Storm Drain	Wildlife, Subsistence Fisherman
Infiltration into Storm Sewer	Wildlife, Subsistence Fisherman
Groundwater Flow to Estuary	Wildlife, Subsistence Fisherman
Volatilization into Buildings	Resident, Schoolchild, employee
Contact	Resident, Car-Washer, Gardener

Please revise the ROD/RAP to include a list of all exposure paths that the remedial action objectives are attempting to address.

Comment No. 16: Acceptable Concentrations for each Pathway and Medium

The two previous comments identified nine exposure pathways for both the marsh crust and groundwater that may result in an unacceptable human health risk or environmental destruction.

The RAP/ROD should be revised to include a table showing the concentration of each chemical of concern (see Comment No. 13) in both groundwater and the marsh crust for each of the nine exposure pathways.

Comment No. 17: Hydrochloric acid odors ignored.

"Hydro-chloride" odors ("slight" in S44, "strong" to "very strong" in S45) are reported in borings from the marsh crust historical contamination investigation, and in borings conducted at other IR sites at the FISC/Annex (A103, A104, A109, A112, A114, A115, S22, S26, S28, S32, S33, S34, S35, S38, S39). Nowhere in the RI Report, the FS or the RAP/ROD is this observation of an acutely toxic gas addressed.

Please revise the RI, FS, and RAP/ROD to include a complete discussion of the investigation, risk assessment, and cleanup alternative evaluation that was performed to address this contaminant.

PROPOSED REMEDY

Comment No. 18: "No remedy" Remedy inconsistent with CERCLA

The final remedy proposed for the marsh crust does nothing to reduce the toxicity, mobility or volume of the toxic pollution that has resulted from the US Navy's violations of state and federal environmental laws.

Please revise the RI, FS and RAP/ROD to include a complete investigation of the marsh crust contamination; prepare a FS that does not exaggerate contamination to make any cleanup alternative appears financially infeasible; and, prepare a RAP/ROD that is coherent, accurate, and proposes to accomplish meaningful cleanup of 700 acres of poisoned earth in the center of San Francisco Bay.

Comment No. 19: Remedy prohibits investigation/cleanup of groundwater

The proposed remedy would prohibit wells of any depth from being installed at the FISC/Annex site except for irrigation, construction dewatering and emergency fire-fighting supply.

The remedy would therefore preclude the installation of additional groundwater monitoring wells at the FISC/Annex site. The remedy would also prevent the cleanup of contaminated groundwater using extraction wells. The monitoring wells necessary to determine the downgradient plume extent for the contaminated groundwater found at IR Site 25 would be prohibited from being installed on the FISC/Annex site. The remedy would prevent the cleanup of this contaminated groundwater located less than 100 feet from the Oakland Estuary shoreline.

Comment No. 20: Remedy requires a permit

CERCLA remedies are exempt from local permit requirements and therefore the City of Alameda Marsh Crust ordinance is not consistent with federal law. The proposed CERCLA remedy for the marsh crust imposes a permit requirement on future cleanup excavations that may be conducted at the Alameda Point Superfund site.

Comment No. 21: Marsh Crust Ordinance is Discriminatory Remedy

The City of Alameda Marsh Crust ordinance does not address the marsh crust contamination found beneath George Miller Elementary School, Healthy Start and Coast Guard Housing. The RAP/ROD should be revised to indicate why the City ordinance is a necessary part of the marsh crust remedy, except in a federal housing project, a public pre-school, and a public elementary school.

Comment No. 22: Remedy does not address bay reclamation project

The Army Corps of Engineers as part of their port expansion project will remove several acres of the FISC/Annex to construct a turning basin. The marsh crust contamination will be directly exposed to the Oakland Estuary.

The RAP/ROD should be revised to proposes a permanent remedy (unlike the currently proposed remedy) that does not need to be revisited before it can be finalized.

MARSH CRUST ECOLOGICAL RISK ASSESSMENT

Comment No. 23: Scope of Ecological Assessment

The RAP/ROD indicates that the marsh crust contamination is located at a depth that prevents a completed pathway for ecological receptors. The RAP/ROD indicates that:

> "...development and construction would generally not be conducted in established habitats...."

The Catellus development project, however, intends to modify storm water outfalls in the seaplane lagoon, which is both a foraging area for the federally protected California Least Tern, and identified as impacted by marsh crust contamination. Since development and construction will be conducted in an established habitat of an endangered species it is appropriate that the scope of the ecological risk assessment for the marsh crust be expanded to evaluate the impacts of the entitled Catellus development project.

Comment No. 24: Cross Media Impacts

The RAP/ROD and supporting RI and FS fail to comply with the legal requirements for a RAP.[7] The marsh crust contamination clearly impacts groundwater quality, but these cross-media impacts were not considered in the FS or RAP/ROD. The marsh crust contamination (polynuclear aromatic hydrocarbons listed under EPA Method 610) has impacted groundwater quality. Impacted groundwater has impacted surface water quality. Impacted surface water has impacted food fish in San Francisco Bay. Impacted fish cause cancer, birth defects and developmental disabilities in persons exercising their right to fish from the shores of Alameda to provide subsistence to their families.

The RAP/ROD fails to address the marsh crusts impact on air quality. Methane, hydrogen chloride, hydrogen sulfide, hydrogen cyanide, and toxic organic compounds present in the marsh crust could impact indoor air. State laws would prohibit construction of a building within 2,000 feet of a landfill, which produces these toxic and explosive gases. According to the RAP/ROD the marsh crust was used as a hazardous waste dump from 1880-1920, and meets the definition of a hazardous waste property.[8]

The RAP/ROD should be revised to meet legal requirements by discussing the impact the marsh crust has on groundwater quality, surface water quality and indoor air quality.

SUMMARY OF SITE RISKS

Comment No. 25: Maximum concentration of benzene in soil gas

The RAP/ROD indicates that the maximum concentration of benzene found in soil gas is 1,700 $\mu g/m^3$. This maximum value is actually 17,000 $\mu g/m^3$. The RAP/ROD should be revised accordingly.

Comment No. 26: Air Samples from George Miller Elementary School

The results of air sampling at Miller Elementary School are referenced as an indicator that no unacceptable health risks exists inside or outside of buildings overlying benzene contaminated groundwater. The results of air sampling at Miller School, however, are inconclusive. Contradicting results for 2-hour composite samples and 8-hour composite samples led the

[7] California Health and Safety Code Section 25356.1 (d)(2)
[8] California Health and Safety Code Section 25220 et al.

sampling team to conclude that changing barometric pressure and changing air temperature influenced air sample results.

As with groundwater monitoring, where a year of quarterly samples is used to reach a conclusion on impacts, air monitoring must be conducted under a variety of environmental conditions to ensure that representative samples are collected for health risk assessment purposes. As children attending Miller Elementary School are potentially exposed to carcinogens in indoor air, it is appropriate that a periodic indoor air monitoring be instituted until the benzene contamination beneath the school is removed. A similar recommendation for annual testing and cleanup was made by ATSDR for Marina Village Housing adjacent to Miller School were high levels of benzene and naphthalene have been found in both groundwater and in air inside residences.[9]

The RAP/ROD remedy should be changed to require indoor air monitoring in all inhabited structures constructed above the contaminated groundwater.

Comment No. 27: Risk Assessment for new school site.

The Newfields Risk Assessment for the new school site at FISC/Annex included an evaluation of risks to schoolchildren from indoor air quality impacts caused by groundwater contamination.

The Newfields Risk Assessment used the unconservative and unprotective assumption that the children attending this kindergarten through sixth grade school would have an average weight of 156 pounds (70 kg).

The Newfields Risk Assessment also assumed that schoolchildren could be exposed to greater concentrations of benzene than their adult teachers without experiencing the same level of risk. A conclusion that contradicts the greater susceptibility that children have to environmental contamination risks.

The Newfields Risk Assessment should be revised to evaluate the school site using the Preliminary Endangerment Assessment Manual as required by state law.[10] The RAP/ROD should be revised to reflect the results of a conservative, protective, and ARAR compliant risk assessment.

---

[9] ATSDR, 1993, letter to Gerald Katz, EFA-West from Gwen Eng, ATSDR, February 16.
[10] California Education Code Section 17210 et al.

Comment No. 28: Fate of PAHs on the Marsh Surface

According to the Newfields Risk Assessment:

> These compounds would not be expected remain [sic] on the surface for any significant amount of time, as PAHs are sensitive to light and would be expected to photo-degrade readily once deposited on the high surface area of plants.[11]

This statement contradicts the marsh crust hypothesis. PAHs were reportedly deposited on the high surface area of marsh grasses for 40 years without any significant chemical breakdown. The Newfields Risk Assessment or the marsh crust hypothesis should be revised to be consistent on the environmental fate of PAHs. The RAP/ROD should be revised to provide a consistent explanation of the source of contamination and the risks proposed by contamination.

ECOLOGICAL RISK ASSESSMENT

Comment No. 29: Seriously Flawed Model

Groundwater is reported to have no impact on water quality in the Oakland Estuary based on a groundwater flow and contaminant transport model detailed in the following administrative record document:

> 1998, Tetra-Tech EMI, "Final Technical Memorandum, Groundwater Contaminant Fate and Transport Modeling, Fleet and Industrial Supply Center, Oakland Alameda Facility/Alameda Annex, Alameda California," prepared for Department of Navy, October 2, 1998.

The signatories of this document, are not identified as either registered civil engineers or registered geologists in the State of California. Neither of these individuals have placed a seal of a professional engineer or geologist, as required by law, on the final work product. The fact that these responsible individuals are not registered indicates that they are not legally allowed to offer groundwater modeling services in the State of California.

Licensing is intended to protect public safety from incompetent professionals. It is my professional opinion that the groundwater model memorandum was prepared by incompetent professionals, and represents a significant threat to public safety.

---

11 Newflieds, 2000, "Baseline Human Health Risk Assessment, FISCO Alameda Facility Annex Site, Alameda, California," January 14, 2000. p. 2-6.

The RAP/ROD should be revised so conclusions are based solely on supporting documents prepared under the direction of licensed professionals.

Comment No. 30: Assumptions about Model Boundary Fluxes

The groundwater model results did not include the volume of water entering and leaving the model domain. The calculated error in the groundwater flow solution was also not provided with the model results.

According to the groundwater model:

> Hydraulic communication between the shallow water bearing zone and the Merritt Sand Water Bearing Zone is not significant.[12]

To the contrary, significant vertical gradient and communication exists between the Shallow Water Bearing Zone and the underlying Merritt Sand Water Bearing Zone. An estimate of the volume of water that would enter the model domain due to upward flow from the Merritt Sands should be provided with the model flow solution. This flow rate should be compared to the flow rates in the model solution to demonstrate that groundwater entering the model domain from the underlying boundary is "not significant."

The modelers made a similar unsubstantiated assumption:

> Rainfall infiltration recharge to the Shallow Water Bearing Zone is not significant.[13]

This assumption is based on the modelers belief that a majority of the model domain is paved. The model boundaries however include IR02 which is an unpaved scrapyard. The model boundaries also include the College of Alameda track, the City of Alameda Little League Field, generously landscaped Coast Guard Housing, the Main Street Linear Park, Estuary Park, and Railroad Tracks that are all predominately unpaved.

In addition to the annual average rainfall of about 20 inches, these areas are irrigated. Water service throughout the FISC/Annex is plagued by leaking pipelines. Rainfall, irrigation, and leaking water pipelines add up to a significant volume of water that is entering the model domain but ignored by the modeler.

---

[12] Tetra-tech, 1998, p. 2-6
[13] Tetra-tech, 1998, p. 2-6

An estimate of the volume of water entering the model domain should be compared to the flow solution to demonstrate that rainfall, irrigation and leaking pipelines are "not a significant" contributor to the water balance.

Comment No. 31: Assumption of Fraction of Organic Carbon Values

The groundwater model assumption concerning the fraction of organic carbon was:

> The fraction of organic carbon used in the model, 0.0037 (3,700 mg/kg or 0.37 percent), is an average value based on the FISCO soil analytical results. TOC soil analytical data for individual samplings and the average TOC concentration are presented in Table 5.[14]

Table 5 footnotes indicate that the source of TOC data is the 1996 Remedial Investigation Report prepared for the FISC/Annex. This footnote is incorrect. The TOC data in Table 5 does not appear anywhere in the FISC/Annex RI Report. Table 5 actually contains the analysis results for TOC samples collected from Alameda Point.[15]

No summary of TOC data or laboratory reports were found in the FISC/Annex RI Report. The text of the RI Report however provides the following information:

> The results of laboratory analysis indicate the percent of organic carbon in the samples ranged from 0.9 percent in sample D4-70 to 11.4 percent in Sample S15.5. Sample A38-9.0 contained a small amount of organic peat material which was not classified as soil by the laboratory, but was analyzed separately and reported to contain 85.3 percent organic carbon.[16]

Clearly the value used in the model for fraction organic carbon have been misrepresented. The values collected from the model domain are significantly greater than the values used in the model. The effect of underestimating the fraction of organic carbon is to reduce the mass of benzene that is found in the model domain.

Comment No. 32: Assumption of Porosity Values

The groundwater model assumed soil porosity values of 0.1 to 0.3. The porosity value of 0.1 is not a realistic value for the unconsolidated coarse

---

[14] Tetra-tech, 1998, p. 3-10

[15] As further example of the lack of quality control, the Final RI Report for Operable Unit No. 1 failed to report the results of TOC analysis that were included in Table 5 of the groundwater modeling technical memorandum.

[16] PRC, 1996, "Fleet Industrial Supply Center, Oakland, the Annex Site, Alameda California, Final Remedial Investigation Report," January.

grained sediments found in the model domain. For instance, if the soil density is approximately 1.6 gm/cm^3, and the water-filled porosity is 0.1, the water content of saturated soils in the domain would be less than 7 percent.

The saturated coarse-grained sediments are actually expected to have water contents of approximately 40 percent, and porosity values of 0.35 to 0.45.

The unrealistic porosity value of 0.1 used in the model would result in unrealistic flow rates and model solutions that are unrealistic.

Comment No. 33: Potentiometric Surface Elevation

The potentiometric surface elevations gathered from differently constructed monitoring wells, and the constant surface elevation used for domain boundary at the tidaly influenced Oakland Estuary, are not representative of groundwater elevations in the model domain.

Elevations collected from S43, S45, and S47, wells which contain two to five foot screens set at a final depth of 18.5 feet deep will have groundwater elevations higher than wells constructed in identical locations, but screened from first encountered groundwater to a depth of 18 feet bgs.

Comment No. 34: Known Contamination Sources Ignored

Within the model domain, significant benzene contamination is found in groundwater beneath Marina Village Housing, and Estuary Park. These source areas were not considered in the groundwater model. This results in unrealistic model conclusions because the mass of benzene in the model domain has been significantly underestimated.

Comment No. 35: Flow Model Calibration

No calibration of the flow model was performed.

Comment No. 36: Contaminant Transport Model Calibration

The contaminant transport model calibration reportedly involved running 100 random simulations using June 1994 as the initial condition. The model simulation which best matched known plume conditions in year one and year two of the model (groundwater sample results from 1995-96) was selected as the best simulation.

The model calibration ignores the fact that the downgradient extent of the groundwater plume emanating from the FISC/Annex has not been determined. Though efforts have been made to determine the plume extent,

the results of hydro-punch boring have not been confirmed with the installation of monitoring wells.

The information necessary to complete the model calibration is therefore unavailable. Until data on the extent of groundwater contamination is collected, any attempt to calibrate model results using the methodology outlined by the modeler is ludicrous.

Comment No. 37:

According to the RAP/ROD:

> ...the modeling concluded that benzene plumes would not migrate beyond the boundaries of the Alameda Facility/Alameda Annex.[17]

This statement should be revised because it is clear that the benzene plumes have and will continue to migrate beyond the boundaries of the Alameda Facility/Alameda Annex. These benzene plumes which originate at source areas in the Alameda Facility/Alameda Annex are shown beneath George Miller Elementary School and Coast Guard Housing at Alameda Point.

Comment No. 38: Indicator chemicals for ecological impacts.

According to the RAP/ROD:

> Because benzene was shown not to pose an unacceptable ecological risk, the other less soluble and less toxic contamination in groundwater, also do not pose an unacceptable risk.[18] (p 2-17)

Since their are contaminants in groundwater that are far more toxic to ecological receptors than benzene, this statement would seem to indicate that these more toxic contaminants (PAHs) would still represent an unacceptable ecological risk.

Polynuclear aromatic hydrocarbons (total of all compounds from EPA Method 610 analysis) are found in groundwater at concentrations much higher than benzene, and much higher than the San Francisco Bay Water Quality Control Plan objective of 15 µg/L. These compounds are more toxic to ecological receptors than benzene because they are bioaccumulative.

The groundwater model should be revised to evaluate the migration of PAHs towards the Oakland Estuary, and the RAP/ROD should be revised to clarify that PAHs are more toxic to ecological receptors than benzene.

---

[17] RAP/ROD, p. 2-17.
[18] RAP/ROD, p. 2-17.

Comment No. 39 Alameda Point Operable Unit 4

No ecological risk assessment has been prepared for the Seaplane Lagoon which is located within the subtidal area. Please revise the RAP/ROD to include the results of a quantitative ecological assessment for marsh crust contaminants found in the Seaplane Lagoon

Closing

The US Navy has caused or permitted environmental contamination. Therefore, the US Navy has not only a legal, but an ethical and moral obligation to cleanup that contamination in a manner that at a minimum, protects human health and the environment and minimizes burdens on future generations. I am disappointed that the US Navy is unwilling or unable to meet this obligation in its former host community of Alameda.

Respectively submitted,

Patrick G. Lynch, P.E.
Civil/Chemical Engineer

Attachments: Comments Draft Feasibility Study, March 19, 1999
Comments Draft Final Feasibility Study, February 17, 2000

cc: Mary Sutter, Alameda Point RAB
Mary Rose Cassa, DTSC
Philip Ramsey, US EPA

CLEARWATER REVIVAL COMPANY
305 Spruce Street
Alameda, CA 94501
(510) 522-2165
FAX (510) 522-8520
email: clearwater@toxicspot.com

98-3007-00

February 17, 2000

Mr. Michael McClellan
c/o NCO Caretaker
Alameda Point Naval Air Station
950 West Mall Square
Alameda, CA 94501

Mr. Dick Hegarty
Alameda FISC/Annex
950 West Mall Square
Alameda, CA 94501

Comments
Draft Final Feasibility Study
Marsh Crust, Sub-tidal Area and Groundwater
Alameda, California

Dear Messrs. McClellan and Hegarty:

Clearwater Revival Company (CRC) has reviewed and prepared the following comments on:

> 2000, Tetra Tech Environmental Management, Inc., "Draft Final Feasibility Study for the Marsh Crust and Groundwater at the Fleet Industrial Supply Center Oakland Alameda Facility/Alameda Annex and Feasibility Study for the Marsh Crust and Former Sub-tidal Area at Alameda Point," prepared for the Department of the Navy, January 6.

Based on our review of this document CRC has concluded that the Feasibility Study (FS) for the marsh crust remains the poorest quality document prepared by the US Navy's environmental restoration program to date. CRC concluded that the FS does not meet the standard of professional care, nor does the FS comply with regulatory guidance for the investigation and selection of a remedy at a CERCLA site., We have detailed our comments below.

Comment No. 1 - Failure to address Clearwater Revival Company's March 19, 1999 comments.

The Draft Final FS fails to address comments prepared by CRC on the previous version of the Draft FS. The failure of the Navy to respond to community comments indicates that community acceptance was not considered during the alternative evaluation process as required by CERCLA. These previous comments are being resubmitted and can be found in Attachment A. The US Navy has a legal obligation to consider these comments concerning the community's acceptance of the proposed remedy in both its evaluation of alternative remedial actions, and in the Navy's

selection of a preferred remedy. The Navy's inability to respond to comments addressing technical deficiencies in the FS demonstrates the technical inadequacy of the FS report.

Comment No. 2 - FS and Key supporting documents withheld from public.

The FS was withheld from the public until following the completion of an Alameda City Council meeting on January 18, 2000. At this Council meeting a vote was taken on the Marsh Crust Ordinance, the sole component of the remedy the FS proposes. Had the FS been made available on or about January 6, 2000, the document could have influenced the City Council's vote on the Marsh Crust Ordinance.

In addition to delaying the release of the FS for the Marsh Crust, several of the studies cited in the FS have never been made available to the public. There is no way for the community to substantiate claims made in the FS without access to this information during the public comment period. Key documents that are not available to the public include:

1999, Tetra-Tech EMI, "Alameda Point/Alameda Annex Benzene Soil Gas Investigation Summary," October 20.

1999, Newfields, Inc., "Draft Baseline Human Health Risk Assessment, FISCO Alameda Facility/Annex Site, Alameda, California," November.

If the Navy insists on withholding such key documents from the community, the community will have no basis for determining if the Navy's proposed remedy is acceptable.

Comment No. 3 - The marsh crust contamination is the result of open-burning conducted by the US Navy.

Sampling evidence and eyewitness accounts indicate the contamination that is referred to as the marsh crust resulted from the Navy's open-burning of metal parts to facilitate recycling. In the 1960's, waste oils, waste fuels, and waste solvents were burned during this salvage operation. These hazardous wastes are the sole source of the characterized marsh crust contamination.

Comment No. 4 - Southern Boundary of Marsh Crust Changed between Draft and Draft Final versions of FS.

It is unclear what information the US Navy relied on to adjust the boundaries of the marsh crust beneath Woodstock Elementary School and private residence in my neighborhood. Please identify the soil boring logs and sample analyses data that was used to develop Figure 1-11. Depth to top

of Subtidal Area and Tidal Marshland, Alameda Facility/Alameda Annex and Alameda Point.

Comment No. 5 - The cost estimates used in the FS are inaccurate.

According to the US EPA's Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA cost estimates in the FS "...are expected to provide an accuracy of +50 percent to -30 percent and are prepared using data available from the RI." Since a Remedial Investigation of the marsh crust and subtidal area was conducted on less than two percent of the alleged area of contamination, the area affected by the marsh crust contamination may be 30 percent less then speculated. As a results, the cost estimates in the FS would fail to meet the level of accuracy expected by the US EPA.

Closing

The US Navy has caused or permitted environmental contamination. Therefore, the US Navy has not only a legal, but an ethical and moral obligation to cleanup that contamination in a manner that at a minimum, protects human health and the environment and minimizes burdens on future generations. I am disappointed that the US Navy is unwilling or unable to meet this obligation in its former host community of Alameda.

Respectively submitted,

Patrick G. Lynch, P.E.
Civil/Chemical Engineer

Attachment

cc: Mary Sutter, Alameda Point RAB
Mary Rose Cassa, DTSC
Philip Ramsey, US EPA

CLEARWATER REVIVAL COMPANY
305 Spruce Street
Alameda, CA 94501

(510) 522-2165
FAX (510) 522-8520
email: ClearH2O.Rev@eworld.com

98-3007-00

March 19, 1999

Mr. Steve Edde
Alameda Point Naval Air Station
950 West Mall Square
Alameda, CA 94501

Mr. Dick Hegarty
Alameda FISC/Annex
950 West Mall Square
Alameda, CA 94501

Comments
Base-wide Feasibility Study
for Marsh Crust and Sub-tidal Wetlands
Alameda Point Naval Air Station

Dear Messrs. Edde and Hegarty

Clearwater Revival Company (CRC) has prepared these comments on behalf of West End Concerned Citizens.

CRC completed a review of the following Navy document:

> Tetra-Tech Environmental Management, Inc., "Base-Wide Focused Feasibility Study for the Former Subtidal Area and Marsh Crust and Groundwater, DRAFT" prepared for Department of the Navy, February 20, 1999.

Based on our review of this document, and independent studies we have completed, CRC has come to the conclusion that the disposal of hazardous wastes by the US military at the FISC/Annex scrap yard has significantly contaminated groundwater beneath that site. This contaminated groundwater has migrated beneath a public school and residential housing and into the Alameda/Oakland Estuary. The discharge of contaminated groundwater from the US military property and into the Alameda/Oakland Estuary violates the San Francisco Bay Water Quality Control Plan (Basin Plan), is a principle source of Water Quality Degradation, and results in the toxic poisoning of people who eat fish from San Francisco Bay.

Despite the US Navy's moral and legal obligations, the Feasibility Study (FS) fails to acknowledge or address this significant environmental and public health problem.

Comment No. 1 - Misappropriated Cost on Community.

Under a 1984 Executive Order the Department of Defense assumed the US EPA's regulatory role under Superfund at Navy installations. The Navy is

therefore required to assume the US EPA's posture and conduct Navy Superfund programs in "strict technical compliance" with the National Contingency Plan. The following pages of comments clearly indicate the Navy's failure to meet this standard, creating a disparate impact in the West End.

The cost to come into "strict technical compliance" should be borne by the Navy and not the community. The community's cost to review the draft "marsh crust" FS is $2,495.00. This money is wasted because the document is of such poor quality a future draft will be required. These duplicative time and costs to the community to accommodate the large number of poor quality Navy environmental documents puts a tremendous burden on the West End community.

The Navy should use independent, objective and competent scientists to complete future environmental investigation and studies.

Comment No. 2 - Fails to comply with Executive Order No. 12898.

Federal agencies are required to develop environmental strategies that identify and address disproportionate exposure and adverse health effects of their activities. The FS and other environmental cleanup activities at NAS and FISC/Annex have not complied with state environmental standards nor have they complied with the generally accepted standards of professional care. The Navy's activities have therefore created, and continue to perpetuate a disproportionate exposure to toxic chemicals and a disproportionate health burden in the West End of Alameda. The West End is a low-income ethnically-diverse community. Until the Navy commits to an acceptable standard of cleanup at its toxic waste sites, a great injustice continues to be done to residents of the West End.

A clear indication that the US Navy has and continues to violate the Civil Rights of West End residents is the statement taken from a Draft Corrective Action Order prepared by the State of California in January 1999. This draft order cited: "continuing efforts by the Navy and the Department of Defense to challenge state regulatory authority and to unilaterally dictate reduced levels of regulatory oversight." The State of California has joined West End resident in accusing the Navy of racial discrimination. As a result of the Navy's discriminatory waste management practices a tremendous burden has been placed on the community (please see Comment No. 1)

Comment No. 3 - Fails to comply with Community Acceptance Criteria.
The FS is not acceptable to the community, because it does not comply with the Community Acceptance Criteria shown in Attachment A (please see Comment No. 1).

Comment No. 4 - Community Acceptance is a threshold criteria.

As a result of the poor quality of the FS, community acceptance has been required to act not as a modifying criteria, but a threshold criteria. The FS is not protective of human health and the environment, nor does it comply with Applicable or Relevant and Appropriate Requirements (ARARs). The community must identify ARARs and exposure pathways that the Navy has ignored placing tremendous burden on the community (please see Comment No. 1).

Comment No. 5 - All property owners must submit FS.

The 727 acres reportedly covered by the FS includes property that is not owned by the Navy. For instance, Woodstock Elementary School, Woodstock Park, future Main Street Park, Union Pacific Right-of-way, Bureau of Electricity Power Plant, Gateway Alameda, single family homes and rental properties are located within the "marsh crust" boundaries. By defining the extent of contamination as the former marsh, the Navy is required to submit a FS together with the owners of each of the impacted properties.

The "marsh crust" hypothesis makes the unsubstantiated conclusion that these privately-owned properties are contaminated. What notification has been made of property owners impacted by the marsh crust contamination? By what right can the US Navy make unsubstantiated conclusions that impact the value of private property? This hypothetical contamination may have originated on Navy property and migrated onto these public and privately owned properties. In which case the Navy is guilty of trespass and negligence.

What is the impact on private property owners who wish to implement a more effective cleanup alternative? Immediately to the East of the FISC/Annex a private property owner completed substantial soil remediation on a former marsh site and received a no further action letter from the County of Alameda. This investment in environmental restoration by a private property owner demonstrates the feasibility of cleanup of the hypothetical "marsh crust" contamination. The future impact of Navy pollution migration on this remediated property should be a consideration in the Navy's cleanup alternative analysis. The current FS infringes on the property rights of others, and places a tremendous burden on the community (Please see Comment No. 1)

Comment No. 6 - No RI/FS Workplan

No Remedial Investigation/Feasibility Study (RI/FS) Work Plan was developed to determine the validity of the unsubstantiated "marsh crust" hypothesis. Polynuclear aromatic hydrocarbons (PAHs) are dense non-aqueous phase liquids (DNAPLs). The borings conducted at FISC/ANNEX and Alameda Point rarely extended to the depth of a low permeability strata to evaluate for the presence of DNAPLs. When borings were extended to low permeability strata (former marsh surface) high levels of DNAPLs were encountered. These observations are entirely consistent with the expected behavior of Navy spills. The failure to evaluate for the presence of DNAPLs places a tremendous burden on the community (Please see Comment No. 1).

Comment No. 7 - No Remedial Investigation (RI) Report

The FS was not proceeded by a Remedial Investigation (RI) as required by CERCLA. It is evident that much of the 727 acre "marsh crust" area has not been subjected to any type of RI. Cleanup alternatives valued at $0.8 to 1.2 billion dollar were prepared for a 727 acre site. The FS is based on samples from a 10 acre portion, exclusively. The OU-1, OU-2 and OU-3 RI Reports for Alameda Point are non-existent or still in draft form. The community and Restoration Advisory Board have reviewed three drafts of the OU-1 RI Report and found each draft to be unacceptable.

The results of Environmental Baseline Surveys and other environmental investigations in this area have been ignored during preparation of the FS largely because the data presented in these documents do not support the "marsh crust" hypothesis. CERCLA process was ignored in the preparation of the FS placing a tremendous burden on the community. (Please see Comment No. 1).

Comment No. 8 - State ARARs are ignored.

State ARARs were ignored during the preparation of the RI and FS. For example, the State constitution protects the right to fish; the Profession and Business Code sets standards for engineering competence, ethical practice, and consumer complaints, and the San Francisco Bay Water Quality Control Plan (Basin Plan) sets numerical Water Quality Objectives. The Navy's infringement on these constitutional and other legal protections places a tremendous burden on the community (Please see Comment No. 1).

Comment No. 9 - Supporting Documents prepared by Unlicensed Professionals.

The Final RI for the FISC/ANNEX was not prepared under the direction of a registered civil engineer or registered geologist and therefore does not comply with ARARs. The Groundwater Beneficial Use Study, the Fate and Transport Modeling and the Risk Assessment were not prepared by licensed professionals. No professional-of-record has placed their seals on the final document as required by the California Business and Professions Code. The failure to comply with laws intended to protect public safety from the unlicensed practice of civil engineering and geology a tremendous burden is placed on the community. (Please see Comment No. 1).

Comment No. 10 - Highly Speculative "Marsh Crust" Hypothesis

Somewhere, someone has reached a conclusion that pre-World War II activities are responsible for contamination throughout the 727 acre subtidal and marsh crust area. There is a paucity of data to support such a far reaching conclusion.

Navy waste management practices included dumping liquid wastes onto the ground, or down storm drains. In either instance the observed "marsh crust" contamination is consistent with a Navy pollution sources. Unless data is produced showing the careful management and disposal of hazardous materials and toxic wastes during the 50 years the Navy operated at the site they should take full responsibility for observed contamination and the evident health and environmental impacts in the surrounding community. The cumulative impact of misappropriated waste management costs has, and continues to place a tremendous burden on the community. (Please see Comment No. 1).

Comment No. 11 - Date the contamination

Perhaps the easiest way to determine when the "marsh crust" area was contaminated is to look for synthetic chemicals and determine the dates these chemicals where first manufactured. What is pentachlorophenol, a chemical first manufactured in 1936, doing in the "marsh crust?" According to the FS, the "marsh crust" contamination is from a Chevron Refinery that closed in 1901 and two PG&E Gas Plants that were closed in the 1920s.

Instead, the "marsh crust" contamination is the result of US Army and US Navy activities at the site. The Navy's poorly reasoned hypothesis are an attempt to avoid responsibility for its own waste management practices which places a tremendous burden on the community (Please see Comment No. 1).

Comment No. 12 - Basin Plan Water Quality Objectives

No numeric ARARs were identified in the FS. Curiously, Chapter 5 of the RI prepared for the FISC/Annex Toxic Waste Sites, numerical values from the Basin Plan are cited. Basin Plan numerical standards, as well as the non-degradation standard, are ARARs. It is evident the discharges of PAHs from FISC/Annex groundwater, and storm water outfalls continue to exceed Water Quality Objective of 15 µg/L total PAHs listed in Table 4B of the Basin Plan. These are instantaneous rather than average standards. These standards cannot be achieved with tidal action which the Water Board considers "dilution by previously discharged wastes." Several of the alternatives, including the preferred alternative do no comply with this threshold ARAR.

In addition to the numerical standards the non-degradation policy prohibits any degradation of groundwater and surface water quality. Ongoing discharges of toxins to San Francisco Bay through leaking storm sewers, and direct groundwater discharge continue to occur. Several of the alternatives evaluated in the FS do not comply with this threshold ARAR. The impact of poor water quality in San Francisco Bay on fisherfolk, places a tremendous burden on the community (Please see Comment No. 1).

Comment No. 13 - Groundwater Beneficial Uses

The marsh crust as depicted on figures is located 75 feet from my residence and underlies many of my neighbor's homes and the nearby Woodstock School. No information is available about the depth of the marsh crust in the area around my home though I suspect it is very shallow. I have a subterranean basement located eight feet below grade. This basement contains a pump to remove groundwater that enters through the walls and floor during periods of high groundwater. The groundwater infiltration rate from November to April can range from 0.33 to 5 gallons-per-minute. Why should the community bear the tremendous burden of sampling this groundwater for Navy toxins to ensure our community is not being poisoned? (Please see Comment No. 1).

Comment No. 14 - Groundwater Modeling

How can a groundwater plume, the lateral extent of which is unknown, be modeled? Does the model accurately predict past and previous groundwater monitoring results? How accurate is this model calibration?

How can a groundwater plume be modeled in an area where many of the contaminants are present above their respective soil saturation

concentrations? Pure product would be present, requiring the modeling of a third phase. Model assumptions for dilute solutions would not be valid.

The over simplified groundwater model does not consider other identified plumes one at the northwest corner of Parcel 178, Marina Village Housing (EM-West , May 1988) and the other at Alameda Point Installation Restoration Site 25 Estuary Park Toxic Waste Site. Data from these sites contradict model results. The over-simplified plume model does not consider the results of samples collected during the week of February 25, 1999, from Parcel 181 North Housing.

Navy plumes have entered cracked storm drains and both impacted San Francisco Bay and left fuel puddles in parking lots. These preferred migration pathways were not considered during the development of the over-simplified groundwater model.

The over simplified groundwater model does not adequately address the long-term effectiveness of the "no action" and "control" alternatives. Contaminated groundwater continues to enter San Francisco Bay where it places a tremendous burden on the community. (Please see Comment No. 1).

Comment No. 15 - Significance of Exposure underestimated

Alameda Point Installation Restoration Site 3 is located within the 727 acre "marsh crust." The only RI Report for this site released to date was a draft report issued in 1998 (Tetra-Tech, 1998 "Remedial Investigation Report - Operable Unit No. 1, Alameda Point Naval Air Station," prepared for US Navy. February). In this Draft RI, tetrahydrocannabinols' were reported in high concentrations in several of the soil gas samples collected from the site (see Table 6-1a, OU-1 RI).

The release of the "marsh crust" FS indicates that the Navy finds it acceptable to have some level of public exposure to tetrahydrocannabinols at Navy toxic waste sites. This contradicts the Navy's policy of "zero tolerance" for tetrahydrocannabinol exposure among its troops and employees. In other words, a Navy employee could be discharged from his employment because their urine contains tetrahydrocannabinols as a result of unintentional exposure to Site 3.

I find myself in a similar situation. As a hazardous waste site worker I engage in medical monitoring as a prerequisite to site work. If evidence of toxic poisoning is discovered during medical monitoring, I don't work. My unintentional residential and recreational exposure to Navy toxic wastes may ultimately effect my earning potential as well as my health.

The Navy should adopt a "zero tolerance" policy for public exposure to Navy toxic wastes and cleanup the "marsh crust" accordingly. The Navy's maximum exposure level philosophy for carcinogens that has been utilized in the risk evaluation of 1,700 acres of contaminated land places a tremendous burden on the surrounding community (Please see Comment No. 1).

Comment No. 16 - Costs to Implement Alternatives

It is entirely incorrect to suggest that a "No Action" alternative on a 727 acre future development site will have no costs associated with residual contamination. To misappropriate the costs of a negligent cleanup plan is incredibly self-serving. The soil properties in the former marsh will require a great deal of earth work below the marsh crust to install services and pile foundations. Substantive costs will be incurred for sampling, monitoring, employee training, and toxic waste disposal during future redevelopment

verify model results and other assumptions made during the human health risk assessment. Any alternative that leaves contamination in place, should provide an effective monitoring network to ensure contaminant migration and degradation occur. The failure to demonstrate the effectiveness of the preferred alternatives places a tremendous burden on the community (please see Comment No. 1).

Comment No. 19 - Inhalation Risk greatly underestimated.

The ASTM Risk Based corrective action standard provides a risk-based screening level for the groundwater-to-indoor-air pathway of 23.8 µg/L benzene at a one-in-one-million cancer risk. By comparison, the Risk Assessment for the FISC/Annex associates a similar cancer risk through the indoor air pathway to a benzene concentration in groundwater of 1,400 µg/L.

Interestingly the ASTM standard is based on the federal cancer slope instead of the California cancer slope and would be reduced by a factor of five under California Risk Assessment standards to 4.76 µg/L. Furthermore the ASTM, evaluated a site with a depth to groundwater of three meters. At the FISC/Annex groundwater often is found at shallower depths representing a greater risk. The unprotective indoor air risk models used by the Navy place a tremendous burden on the community (please see Comment No. 1).

Comment No. 20 - Methane and landfill gases.

Investigations at Site 3 located within the "marsh crust" boundaries revealed high levels of methane gas in shallow soils. The State Health and Safety Code requires all cleanup plans for landfill gas areas to be approved by the Integrated Waste Management Board. The Navy's failure to comply with the state Health and Safety Code places a tremendous burden on the community (please see Comment No. 1).

Comment No. 21 - Ecological Assessment.

An unlined drainage channel which runs alongside Main Street is the only remnant of the former marsh. The endangered Salt Marsh Harvest Mouse has been observed in this channel.

The water depth in the channel is consistent with groundwater depths in the area. Contaminated groundwater appears to enter the channel from Alameda Point IR Site 7 and from underneath Marina Village Coast Guard housing. This groundwater contains contaminants at levels which exceed Basin Plan requirements for salt marsh habitats. The introduction of navy contamination into the food chain places a tremendous burden on the community (please see Comment No. 1).

Comment No. 22 - Historical Waste Practices.

One of the principle wastes produced by industries operating at Alameda Point prior to the US Navy was a mineral waste, calcium carbonate. The Borax Company who produced this waste did not arrange this mineral waste in a neat pile. Instead this mineral waste was disposed of in pattern coincident with the shape of the Navy breakwater and the shoreline of the sea plane lagoon. In this case the Navy apparently exhumed the borax company's waste disposal site during filling of the Naval Air Station.

Even with pre-existing contamination the Navy has played a large role in distributing the contamination throughout the environment.

Closing

CRC looks forward to the opportunity to review the Draft RI/FS Workplan for the marsh crust and subtidal area. CRC looks forward to the opportunity to review the Draft RI Report for the marsh crust and subtidal area. Having completed those reviews, CRC looks forward to the opportunity to review a FS Report for the marsh crust and subtidal area that meets "strict technical compliance" with the National Contingency Plan, and responds in a meaningful way to the community's concerns indicated above.

The collateral damage caused by the gross negligence of the US Navy's environmental restoration program must end.

Respectively Submitted,

Patrick G. Lynch, PE
Civil/Chemical Engineer

Attachment: Community Acceptance Criteria

ATTACHMENT 1

Community Acceptance Criteria

1. Ensure cleanup completion ten years after the Navy's last scheduled Record of Decisions, up to the year 2050 for monitoring of residual contamination. That allows one year of cleanup per each year of Navy occupancy.

2. Complete the cleanup project in a timely manner. Set a schedule for cleanup activities and stick to it.

3. Cleanup property near existing neighborhoods first. Residents deserve to be protected from exposure to contamination. As fence line property is close to existing infrastructure, it makes the most sense to redevelop this land first.

4. Cleanup levels should support property use that is unrestricted by environmental contamination to ensure future land use flexibility and protection of future occupants. Without full cleanup to standards appropriate for residential use, the residual contamination will restrict the future use of the property.

5. Create buffer zones around special use areas to ensure protection of the community and the environment. The following are recommended buffer zones:

a) Residences, schools, parks and daycare facilities: 250 ft. buffer zone with most protective cleanup level (residential level cleanup without property use restrictions);

b) Private wells and subterranean basements: 750 ft. buffer zone with cleanup to drinking water standards to ensure protection at potential groundwater contact points;

c) Shoreline: 250 ft. buffer zone with cleanup of soil and groundwater to standards protective of food web;

d) Buried utility lines: 250 ft. buffer zone with cleanup of groundwater to standards protective of the aquatic food web.

6. Investigate impacts of the migration of pollution off of the base. The movement of contamination onto private and City property adjacent to the base and to offshore areas in the Oakland Harbor and San Francisco Bay has occurred. The Navy has the responsibility to extend its investigation into these areas to determine the limits of its contamination and clean up accordingly.

7. Eliminate contamination of the Bay ecosystem by fully investigating and remediating contaminated sediment surrounding the base.

8. Soil handling should be properly controlled to minimize releases of contaminated soil into the air, onto adjacent properties, into storm drains, and into the Bay. A schedule and budget which covers the complete project should be in place prior to initiation of removal activities.

a) Excavation activities: No excavation when wind speed exceeds 10 mph. Air monitoring should be conducted for excavations close to sensitive areas and whenever the excavated soil volume exceeds 1,000 cubic yards.

b) Stockpiles: Soil piles should be placed at least 2,000 feet from residences and 500 feet from wetlands and the Bay. They should be immediately covered, with adequate storm water runoff protection. They should be inspected daily and repairs made immediately.

c) Transportation: Soil transported off of the base should be adequately covered and should follow approved transportation routes.

9. Involve public in cleanup decisions. The public needs to be informed of the risks from contaminated areas. A public record of cleanup activities should be updated regularly, maintained and made accessible at a local public library.

10. Adhere to existing cleanup practices. Following existing California and federal cleanup laws and policies to reduce the community's burden to learn multi-processes or to seek outside professional assistance. The Navy should also demonstrate success of similar cleanup processes at comparable federal facilities.

11. The public should be fully informed about the health risk from naturally occurring chemicals. This health risk must be considered when setting cleanup goals.