DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON, D.C. 20350-2000

IN REPLY REFER TO

5090
Ser N453E/0U595690

18 SEP 2000

From: Chief of Naval Operations (N45)
To: Commander, Naval Facilities Engineering Command

Subj: NAVY INTERIM FINAL POLICY ON THE USE OF BACKGROUND CHEMICAL LEVELS

Encl: (1) Navy Interim Final Policy on the Use of Background Chemical Levels

1. Enclosure (1) is provided in response to concerns received from the field to clarify Navy policy on the consideration of background chemicals in the list of Contaminant of Potential Concern in the Environmental Restoration program. Enclosure (1) describes how to consider background chemical levels in the program by 1) identifying those chemicals that are in the environment due to releases from the site; 2) eliminating from consideration in the risk assessment process both naturally occurring and anthropogenic chemicals that are present at levels below background; 3) ensuring documentation and discussion of potential risk from chemicals that have been eliminated during the background evaluation process; and 4) developing remediation action levels that are not below background.

2. My point of contact for this matter is Wanda L. Holmes at (703) 604-5420 or DSN 664-5420 or email holmes.wanda@hq.navy.mil.

L. C. BAUCOM
Rear Admiral, U.S. Navy
Director, Environmental
Protection, Safety, and
Occupational Health Division

Copy to:
LANTNAVFACENGCOM
PACNAVFACENGCOM
SOUTHWESTNAVFACENGCOM
SOUTHNAVFACENGCOM
NORTHNAVFACENGCOM

Subj: NAVY INTERIM FINAL POLICY ON THE USE OF BACKGROUND CHEMICAL LEVELS

Copy to: (continued)
EFACHES
EFAWEST
EFANORTHWEST
NFESC

NAVY INTERIM FINAL POLICY ON USE OF BACKGROUND CHEMICAL LEVELS

PURPOSE

The purpose of this policy is to address background chemical levels from naturally occurring and anthropogenic sources and their use in the Environmental Restoration Program. This policy was developed in response to issues concerning identification of sites for no further action, the elimination of background chemicals from the Contaminant of Potential Concern (COPC) list, and the identification of action levels at sites where it has been determined there is a need for remediation.

APPLICABILITY

Policies and procedures contained herein apply to site cleanups funded under Environmental Restoration, Navy (ER,N) and Base Realignment and Closure (BRAC).

DEFINITIONS OF BACKGROUND CHEMICAL:

- **Naturally occurring chemical levels (non-anthropogenic)** - Ambient concentrations of chemicals present in the environment that has not been influenced by human activities (e.g., arsenic). (Risk Assessment Guidance for Superfund Part A (RAGS Part A), EPA 1989)

- **Anthropogenic chemical levels (non-naturally occurring)** - Concentrations of chemicals that are present in the environment due to human-made, non-site sources (e.g., application of pesticides, herbicides, lead from automobile exhaust). (RAGS Part A EPA, 1989)

POLICY

This policy requires that:

1) There is a clear and concise understanding of chemicals that are released from a site thus ensuring Navy is focusing on remediating the release.
2) Baseline risk assessments should not be conducted on chemicals that are present at levels less than background chemical levels. All chemicals that are screened out as a result of background considerations shall be discussed and documented in the risk characterization section of the baseline risk assessment report. (See Figure 1)
3) Site cleanup remedial goals are not below background levels.

Background evaluations should be conducted during site investigations in order to differentiate between the Navy's cleanup responsibilities and background sources. The COPC selection process (which includes elimination of chemicals on the basis of background evaluation) should be discussed as early as possible with regulators and communicated to the community. The evaluation of background chemicals shall be scientifically based, defensible, and cost effective.

Background Chemicals

Background chemical evaluation is one of the tools used to determine the COPC. RAGS Part A, EPA 1989 states "Background sampling is conducted to distinguish site-related contamination from naturally occurring or other non-site related levels of chemicals." Background chemical levels do not signify a release of a hazardous substance according to the definition of a release as stated in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Background chemicals are either naturally occurring in soil, surface water and sediments or are anthropogenic (placed there by human activities). Background distributions can range from localized to ubiquitous (widespread; e.g. pesticides, Polycyclic Aromatic Hydrocarbons) in certain areas. Often times naturally occurring, ubiquitous chemicals may be present in the environment due to natural sources (e.g. forest fires)(RAGS Part A, EPA 1989). Understanding the nature of

the potential release of the site is the first step in determining the risk posed by the site.

Naturally Occurring Chemical Levels (NOCL)

Naturally occurring background chemicals and their levels are substances that occur regardless of the presence or absence of human activity. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 104(3)(A) states "Limitation on Response. The President shall not provide for a removal or remedial action under this section in response to a release or threat of release of a naturally occurring substance in its unaltered form..."

Anthropogenic Chemical Levels (ACL)

Anthropogenic background chemicals and their levels are substances that are in the environment as a result of human activities. Standard application (i.e., applied according to directions) of chemicals (e.g. pesticides and herbicides) are to be considered anthropogenic levels when it can be demonstrated that on-site and background levels are similar.

Base-wide Background Chemical Levels

To fully understand the nature of the site it is necessary to distinguish between releases caused by Navy operations and chemicals from those caused by non-site related sources (background). Base-wide background chemical levels should be established and considered as early as the Preliminary Assessment/Site Inspection phase of the CERCLA process or the Resource Conservation and Recovery Act (RCRA) Facility Investigation of the RCRA process. Establishing scientifically defensible background chemical levels early in the process provides rationale to support no further action decision for sites with 'no site releases'.

Risk Assessment

Background chemicals should be considered during the screening portion of the Human Health Risk Assessment (HHRA) and during Step 3a of the Tier 2 Baseline Ecological Risk Assessment (BERA) (CNO Policy April 1999). It is important to establish site contaminants early in the

cleanup process and the evaluation of background chemicals during the screening HHRA and Step 3a of the BERA will assist in the identification of those contaminants that are truly the result of a past release. Once background chemical levels have been established those chemicals should not be carried through the remainder of the baseline risk assessment.

In some cases, there may be risk associated with chemical levels below background levels. This risk is outside of the scope of the Navy's Environmental Restoration Program but it should be communicated to our stakeholders. Elevated chemicals that were lower than background levels and screened out due to background considerations in the data evaluation step of the baseline risk assessment should be compared to the appropriate risk-based benchmark concentrations. The results should be documented in the Risk Characterization section of the baseline risk assessment report.

Cleanup Action Levels

The action level for the remediation of sites should be risk-based, should not be below background levels, and should target the risk associated with the COPC or contaminant concentration exceeding background chemical levels (i.e. incremental risk). Note that there may be other Applicable Relevant and Appropriate Requirements that should be considered.

Conclusion

In summary: 1) identify those chemicals that are in the environment due to releases from the site; 2) eliminate from consideration in the baseline risk assessment process both naturally occurring and anthropogenic chemicals that are present at levels below background and document those chemicals in the baseline risk assessment report; and 3) develop remediation action levels that are not below background.

Use of Background Chemical Levels

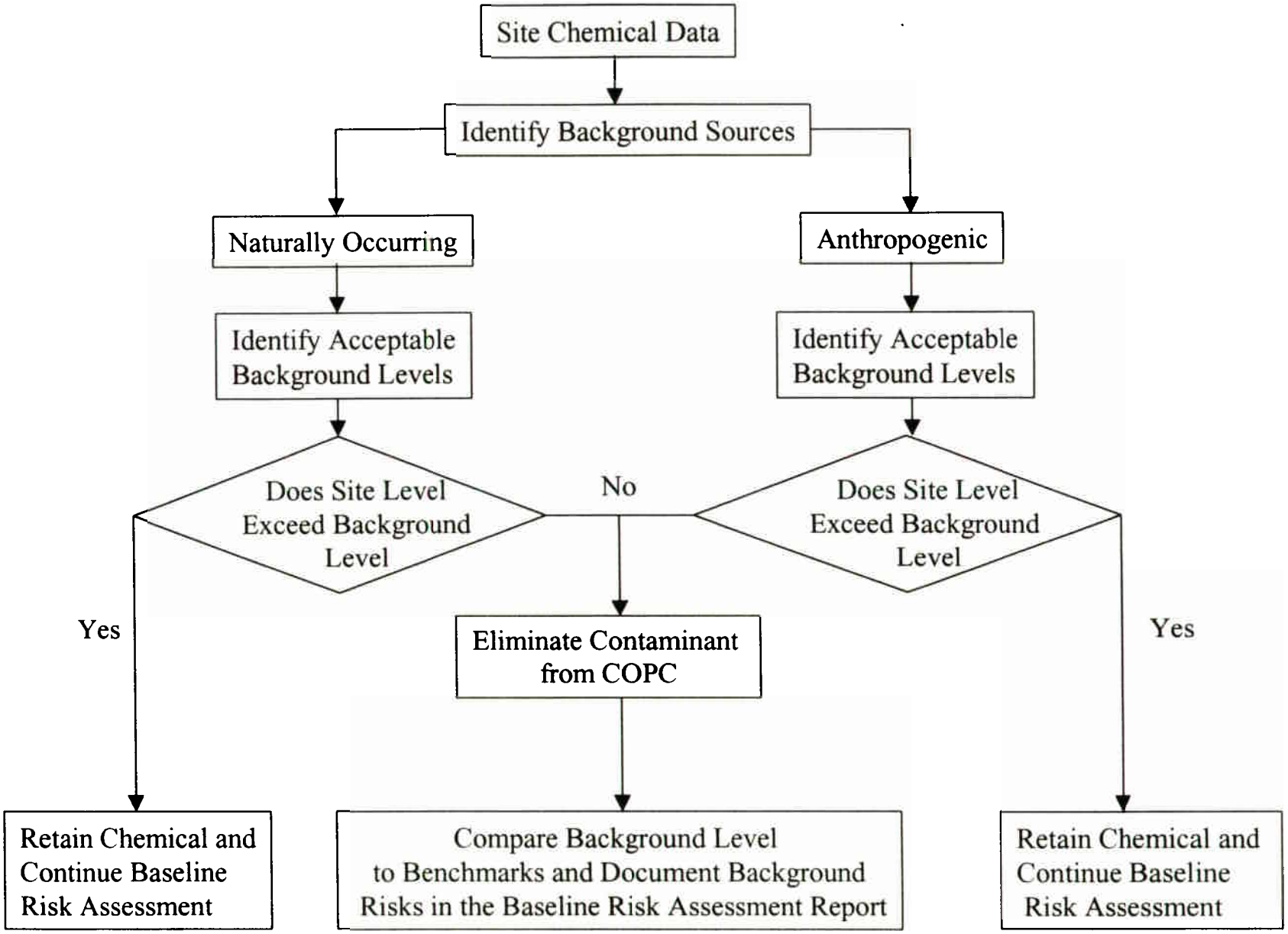

Figure 1