



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

April 25, 1992

Stephen Chao
WestDiv Engineer in Charge
Department of the Navy
Western Division
Naval Facilities Engineering Command
900 Commodore Way, Bldg. 101
San Bruno, CA 94066-0720

Dear Mr. Chao:

The U.S. Environmental Protection Agency is submitting the enclosed comments on the Draft Operable Unit 2 Technology Screening Report for NAS Moffett Field. These comments were prepared by our representative, SAIC. If you have any questions, please call me at (415) 744-2385. Thank you.

Sincerely,

A handwritten signature in black ink that reads "Roberta Blank".

Roberta Blank
Remedial Project Manager

Enclosures (1)

cc: Cyrus Shabahari, DTSC
Wilfred Bruhns, RWQCB

1390

Handwritten initials "B/N #3" in black ink.



Science Applications International Corporation
An Employee-Owned Company
Technology Services Company

April 23, 1992

DCN:TZ4-C09015-RN-M11684

Ms. Roberta Blank (H-9-2)
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, Ca 94105

Ref: EPA Contract No. 68-W9-0008
EPA Work Assignment No. C09015
SAIC/TSC Project No. 06-0794-03-0630
Draft Operable Unit 2 Technology Screening Report

Dear Roberta:

SAIC/TSC has completed its technical review of the referenced report. The review was performed by Jim Kao, SAIC/TSC's Senior Engineer.

If there are any questions concerning the review comments, please call me at (415) 399-0140.

Sincerely,

A handwritten signature in cursive script that reads "Fred Molloy". The signature is written in black ink and is positioned above the typed name and title.

Fred Molloy
Work Assignment Manager

Copy: Jim Kao

FM:vr

TECHNICAL REVIEW
DRAFT OPERABLE UNIT 2
TECHNOLOGY SCREENING REPORT
NAVAL AIR STATION, MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

APRIL 1992

Submitted To:

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION IX
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Submitted By:

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EPA CONTRACT NO. 68-W9-0008
EPA WORK ASSIGNMENT NO. C09015
SAIC/TSC PROJECT NO. 06-0794-03-0630

TECHNICAL REVIEW
DRAFT OPERABLE UNIT 2
TECHNOLOGY SCREENING REPORT
NAVAL AIR STATION, MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

GENERAL COMMENTS

1. The identification of ARARs and the evaluation of soil, water, and air remediation technologies is highly dependent on the contaminants of concern at the site. Section 2.1 identifies the potential contaminants of concern for this report. This contaminant identification is taken from a separate preliminary baseline risk assessment. If the contaminants of concern are revised in the final baseline risk assessment, the evaluations or ARARs and soil, water, and air remediation technologies will need to be revised.
2. The justifications for eliminating soil remediation technologies during the technical applicability screening process, presented in Sections 2.5.1.1 through 2.5.1.5, were not consistent with the evaluation criteria presented in Section 2.5. A soil remediation technology should have been retained for further consideration if it met one or more of the five applicability criteria presented in the first partial paragraph on page 62. See specific comments on Sections 2.5.1.1 through 2.5.1.5.
3. Discussions about the cost should not have been considered during the technical applicability screening process.

SPECIFIC COMMENTS

1. Page 44, Section 1.3.1, Chemical-Specific ARARs

Resource Conservation and Recovery Act (RCRA) maximum concentration limits (MCLs) are standards adopted as part of the RCRA ground water protection regulations (40 CFR 264.94). RCRA MCLs should be considered as potential chemical-specific ARARs.

The Clean Air Act (CAA) requires EPA to promulgate standards for new sources of air emissions. A New Source Performance Standard (NSPS) may be applicable if the facility at the Superfund site is a new source subject to an NSPS, or an NSPS may be considered relevant and appropriate if the pollutant emitted and the technology employed are sufficiently similar to the pollutant and source category regulated by an NSPS and that they are well-suited to the circumstances of the release at the CERCLA site.

State air toxic programs should be evaluated, specifically the standards promulgated by the Bay Area Air Quality Management District (BAAQMD). If these standards are more stringent than federal requirements, they should be used as ARARS.

2. Page 51, Section 1.3.2, Location-Specific ARARs

RCRA location requirements, contained in 40 CFR 264.18, should be evaluated as potential location-specific ARARs. RCRA location requirements are applicable to treatment, storage, and disposal facilities handling RCRA hazardous waste and should at least be considered as potential relevant and appropriate requirements.

It is unlikely that federally-owned land designated as either a wilderness area or a wildlife refuge is located within OU2, but an investigation should be performed and a statement should be prepared supporting such an assumption.

The reference in Table 6 to Clean Water Act (CWA) Section 402 appears to be incorrect. Section 402 addresses the National Pollutant Discharge Elimination System (NPDES) and is considered a potential action-specific ARAR. Section 404 of the CWA addresses discharge of dredge or fill material into wetlands and would be an ARAR if such activity is performed during cleanup activities. 40 CFR Part 6, Appendix A describes EPA's policy on implementing Executive Orders 11988 (Floodplain Management) and 11990 (Wetlands Protection) and would be ARARs if the cleanup takes place in a floodplain region or if wetlands areas are to be altered.

The Clean Air Act (CAA) contains provisions for pollutant sources in National Ambient Air Quality Standards (NAAQS) attainment and nonattainment areas.

Treatment processes which discharge a secondary waste air stream may have to comply with these standards.

3. Page 53, Section 1.3.3, Action-Specific ARARs

The Porter-Cologne Water Quality Control Act contains provisions for the management of hazardous waste as it specifically relates to the protection of California ground and surface water. Ground water collection, soil containment, and treatment facility discharges to ground and surface water are specifically regulated in California Code of Regulations (CCR), Title 23. The Porter-Cologne Water Quality Control Act and CCR Title 23 should be evaluated for potential ARARs.

The BAAQMD will have requirements addressing the attainment of California Ambient Air Quality Standards. These requirements should be considered potential ARARs for any activities which may discharge pollutants into the atmosphere.

4. Page 68, Table 9, Screening of Remedial Technologies and Process Options for Water

Distillation, the separation of more volatile materials from less volatile materials by a process of vaporization and condensation, is a potential physical treatment process that was not included in this table. The hazardous waste streams for which removal and reclamation of volatiles by distillation is most suitable are liquid organics, including organic solvents and halogenated organics. Therefore, distillation would be applicable as a treatment technology for the potential contaminants of concern at Operable Unit (OU) 2.

5. Page 71, Section 2.5.1.1, Containment

This section specifically states that "Horizontal and vertical barriers would be used primarily to prevent leaching of contaminants from soils into the groundwater." The evaluation criteria for containment technologies provided on page 62 is ". . .to inhibit further chemical migration from the unsaturated to the saturated zones, . . ." Horizontal and vertical barriers should not have been eliminated during the technology screening process. The concerns discussed in

this section should have been addressed in the evaluation of applicable technologies and process options.

6. Page 71, Section 2.5.1.2, In Situ Treatment - Thermal

Vitrification was eliminated from further evaluation because it "may not be applicable for some organic wastes." No discussion is provided which discusses which organic wastes are not amenable to this treatment technology and whether the potential contaminants of concern for this site are among those wastes. Unless it can be demonstrated that the potential contaminants of concern can not be treated by this technology, vitrification should not have been eliminated during the technology screening process.

7. Page 71, Section 2.5.1.3, In Situ Treatment - Chemical

Chemical oxidation is applicable to a large number of organic wastes. Until a more detailed evaluation of which organic wastes are amenable to this treatment process is performed, it is not appropriate to eliminate this technology. Any justification for elimination needs to address applicability of this technology to treat the potential contaminants of concern.

Chemical reduction was eliminated because it "has only been demonstrated experimentally and may result in by-products of VOCs that are more toxic than the parent compounds." There is no discussion about whether or not chemical reduction can treat the potential contaminants of concern. If it can, then chemical reduction should have been retained for further evaluation of the concerns discussed in this section. If it cannot, then chemical reduction should be eliminated.

Polymerization was eliminated because it "is more applicable for ground water contamination by a single contaminant." Just because polymerization is more applicable for ground water contamination by a single contaminant, does not mean it is not applicable for treating soil contamination. The argument made in this section discusses effectiveness not applicability. If polymerization is not applicable for the potential contaminants of concern, then it should be eliminated. Otherwise, it should be retained for further evaluation.

Chemical dechlorination was eliminated because its "by-products . . . are not well understood." Once again, this is not a statement about chemical dechlorination's inability to treat the potential contaminants of concern. In fact, recent experimental studies have shown that chemical dechlorination may be effective at treating volatile and semivolatile organic compounds (ref. 5).

8. Page 72, Section 2.5.1.4, Aboveground Treatment - Thermal

Soil incineration is applicable for treating soils contaminated with organic compounds. The justification for eliminating this technology appears to be based on cost. Cost in itself is not an appropriate reason for eliminating this or any other technology. Cost is only evaluated after effectiveness and implementability have been evaluated. If effectiveness and implementability are equal, then cost can be used to select between the technologies. In any case, cost should not have been used to eliminate soil incineration during the technical screening process.

9. Page 72, Section 2.5.1.5, Aboveground Treatment - Physical

It appears that soil washing was eliminated because "It is more suitable for removing high concentration compounds. . ." and because it ". . .generates large volumes of a dilute secondary aqueous waste stream that would require further treatment." The first argument is questionable. The primary assumptions for the soil washing technology are

- 1) a significant fraction of contaminants are physically or chemically bound to the silt, humus, and clay particles,
- 2) silt and clay are attached to sand, gravel, and rock by physical processes,
- 3) physical washing of the sand/gravel/rock portion will remove the fine sand, silt, humus, and clay, and
- 4) contaminants will be removed with the fine sand, silt, humus, and clay.

It may be more cost effective to treat the secondary stream if it contains high concentrations of contaminants, but it does not appear that this treatment

technology is any less effective or applicable to soil contamination at low levels. The generation of a secondary waste stream does not address applicability. Ultimately the requirement for treating a secondary waste stream increases cost for this technology and does address the applicability of using this technology to treat the contaminated soil.

10. Page 72, Section 2.5.2.1, Chemical Treatment

Oxidation was eliminated because it may produce ". . .by-products that would require additional treatment." Once again, the need for secondary treatment addresses the cost for using this technology, not the applicability of this technology to treat the potential contaminants of concern. Oxidation should only have been eliminated if it was not applicable to treat potential contaminants of concern.

11. Page 72, Section 2.5.2.3, Thermal Treatment

A cost argument was used to eliminate wet air oxidation as a potential treatment technology. No discussion was provided which discuss the applicability of this technology to treat the potential contaminants of concern.

12. Page 81, Section 2.6.1.3, Removal

This section does not explicitly state that soil removal by conventional excavation will be considered further in the feasibility study (FS). Since several aboveground soil treatment technologies will be considered further in the FS, soil removal is required and, therefore, should be retained for further evaluation.

13. Page 81, Section 2.6.1.4, In Situ Treatment - Thermal

It appears that the radio frequency heating technology was eliminated for three reasons: 1) its an innovative technology; 2) it may be difficult to implement; and 3) it would require moderate capital and high O&M costs. The three reasons for eliminating this technology would be sufficient if there is another technology that has the same, or greater, effectiveness. However, no comparison

of this technology to any of the other in-situ or aboveground soil treatment technologies is provided.

14. Page 90, Section 2.6.2.5, Physical Treatment (2nd Complete Paragraph)

Steam stripping was eliminated from further consideration because ". . .process water VOC concentrations are expected to be low." The effectiveness of steam stripping was not compared to any other process water treatment technologies. One of the potential contaminants of concern, acetone, is effectively handled by steam stripping. The effectiveness of steam stripping to remove acetone should have been compared with the effectiveness of the other process water treatment technologies to remove acetone. Only if another technology has equal or greater effectiveness to remove acetone at low concentrations, is it justifiable to eliminate steam stripping from further evaluation in the FS.

REFERENCES

1. EPA, 1988. "Draft CERCLA Compliance With Other Laws Manual." OSWER Directive 9234.1-01, May 1988. Office of Solid Waste and Emergency Response.
2. EPA, 1989 "CERCLA Compliance With Other Laws Manual: Part II. Clean Air Act and Other Environmental Statutes and State Requirements." EPA/540/G-89/009, August 1989. Office of Solid Waste and Emergency Response.
3. EPA, 1985 "Handbook: Remedial Action at Waste Disposal Sites (Revised)." EPA/625/6-85/006, October 1985. Office of Emergency and Remedial Responses.
4. Nyer, E. K., 1985. Groundwater Treatment Technology. New York: Van Nostrand Reinhold
5. Freeman, H. M. (ed.), 1988. Standard Handbook of Hazardous Waste Treatment and Disposal. McGraw Hill.
6. Proceedings of the 1990 EPA/A&WMA International Symposium, Hazardous Waste Treatment: Treatment of Contaminated Soils. Air and Waste Management Association.