	PROJECT NOTE NO.	PROJECT NO.
M60050.001022 MCAS EL TORO SSIC # 5090.3	PN-0145-67 CLE-C01-01F145-I2-0055	01-F145-H6 M60050.001022

CONFIRMATION OF:	CONFERENCE		DATE HELD	18-20 November 1992
	TELECOM		DATE ISSUED	6 January 1993
	OTHER	X	RECORDED BY	Chuck Elliott/CH2M HILL
			PLACE	CH2M HILL, Santa Ana

SUBJECT

MCAS El Toro RI/FS Phase I, CTO #0145
DQO Workshop, 18-20 November 1992
Summary of Events, Decisions, and Action Items

PARTICIPANTS: (* DENOTES PART-TIME ATTENDANCE)

See last page

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	A Data Quality Objectives (DQO) workshop was held at the CH2M HILL/Santa Ana office from 18-20 November 1992. The workshop was sponsored by the U.S. Navy, and facilitated by Viar Corporation. Participants represented the following organizations: the Naval Facilities Engineering Command, Southwest Division (SOUTHWESTDIV); Marine Corps Air Station (MCAS) El Toro; the U.S. Environmental Protection Agency (EPA); the California Regional Water Quality Control Board, Santa Ana Region (RWQCB); the California Department of Toxic Substances Control (DTSC); CH2M HILL; IT Corporation; Jacobs Engineering Group, Inc.; and Bechtel Environmental, Inc. The objectives of the workshop were to provide training on the DQO process, reach consensus on issues related to DQO development for the RI/FS at MCAS El Toro, and to develop subgroups with specific information-gathering responsibility to support decisions by the MCAS El Toro Federal Facilities Agreement Managers Team (the team). This document summarizes the activities that occurred each day during the workshop. It also lists the decisions and action items agreed upon by the team. Wednesday, 18 November 1992 The morning was devoted to introductions and a general presentation of the DQO process. Topics of discussion included: o Experimental design process and design optimization techniques o Development of consensus-based performance standards o Laboratory and analytical issues o Statistical sampling issues o Steps in the DQO process: (1. state the problem to be resolved; 2. identify the decision that addresses the problem; 3. identify inputs affecting decisions; 4. define boundaries of the study; 5. develop a decision rule; 6. specify limits on uncertainty; 7. optimize the design)

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	The afternoon focused on a DQO case study; namely, the development of DQOs for a sewage lagoon site at MCAS Yuma. The DQO process was developed for two possible investigative approaches for the lagoons. The first ("original six-cell model") considered the situation where each lagoon is considered as a separate stratum for design purposes. The second ("unified model") grouped the separate lagoons into one stratum. The case study was used to illustrate statistical concepts important to the DQO process such as coefficient of variation, confidence level, power, and Minimum Detectable Relative Difference (MDRD).
	Thursday, 19 November 1992
	Thursday was devoted to discussion of the application of the DQO process to Site 16 (Crash Crew Pit No. 2) at MCAS El Toro. Each step in the DQO process was explored, with emphasis on surface soils at Site 16. For example, known information was summarized as a way of stating the problem to be resolved. In addition, all the known potential exposure paths for humans were summarized (e.g., surface soils may impact humans through the air, surface water, groundwater, and by ingestion; subsurface soils may impact humans through groundwater, or if brought to the surface or exposed to workers, etc.). Members of the team expressed concern that Phase I RI/FS data was not available for Site 16. It was agreed that the workshop would be regarded as an exercise only, and that final DQOs would not be developed until sample data were available.
	The second step of the DQO process involves identifying the decision that addresses the problem. After discussion, the team formulated a human risk statement, or hypothesis, for surface soils to be proved or disproved during the RI/FS: "Surface soils are contaminated at some level that pose an unacceptable risk to human health or the environment". The level in question may be "background", Applicable Relevant and Appropriate Requirements (ARARs), or Potential Remediation Goals (PRGs). If the statement is true, then the surface soils must be studied or remediated. The range of possible actions could include: an Emergency Removal Action, further study, remediation, engineering control, institutional control, or No Further Action. LCDR Serafini pointed out that, for MCAS El Toro, a crucial question also concerned whether potential contamination at a site would impact the installation's ability to use the site according to the Master Plan.
	The third step of the DQO process is to identify inputs affecting decisions. Example inputs to determine Contaminants of Concern (COC) included other operations at the installation, other operations at other installations, and Material Safety Data Sheets. These sources would yield a "long list" of COCs. After preliminary evaluation, many contaminants would be eliminated, either because they were not used, or because they pose no risk. Thus, a "mid-size" list would be developed. After the pilot study (Phase I at MCAS El Toro) and with input data from the RCRA Facility Assessment at MCAS El Toro, the list would be trimmed further to yield a "short list".
	In order to make decisions on COCs after obtaining sample data, it is necessary to have a measure of meaningfulness, such as the mean, the coefficient of variance, and some estimate of spatial extent. A "cutpoint" for each contaminant should also be developed, to enable decisions. For example, for the compound xylene, the "background" (detection limit) may be 1 parts per billion (ppb); the limit of cleanup

using Best Available Technology (BAT) may be 2 ppb; the cleanup using Best Practicable Technology (BPT) may be 10 ppb; and the PRG at 10^{-6} may be 20 ppb. The decision-making team may choose 10 ppb for its cutoff point.

The fourth step is to define boundaries for the study. Spatial boundaries were agreed upon for Site 16, and the depth for the present exercise of surface soils was set at 6 inches. There were no temporal boundaries, and the population of concern is humans (not wildlife).

The fifth step is to develop a decision rule. For this exercise, the decision statement was established as: "If the mean (xylene) concentration is statistically greater than 10 ppb, then the area (stratum) will be remediated. If not, then the site will be studied further or declared clean".

The sixth step of the DQO process is to specify limits on uncertainty. Discussion centered on the use of statistics to specify limits. Limits were defined by the statistical terms "confidence". "power", and MDRD. Confidence is a way of stating how many times out of 100 team members are willing to risk declaring a stratum dirty when it is really clean. Power is a way of stating how many times out of 100 that team members are willing to risk declaring a stratum clean when it is really dirty. MDRD refers to the variability in data from the laboratory. Typically, an MDRD is picked for an analytical method. The compound with the greatest variability can be used as a conservative estimate of MDRD for all the compounds in that analytical method. Data Useability in Risk Assessment (DURA) guidance proposes a confidence > 0.80, power > 0.90, and an MDRD = 0.40. If the cutpoint for xylene were 10 ppb, then these criteria would establish a "decision envelope" of 6-14 ppb. If the mean concentration of xylene were 15 ppb in one stratum, for example, then the decision automatically becomes remediation. If the mean concentration of xylene were 7 ppb in a second stratum, for example, then the decision may be that further study is required. If the concentration were 5 ppb, then the decision may be to declare the stratum clean with regard to xylene.

Limited discussion took place on subsurface soils, and what could constitute a cutpoint for subsurface soils. A cutpoint would have to be a level below the state modified TCLP requirements. This would be established either through use of models (with additional data collected for calibration), or by collecting samples for Toxicity Characteristic Leaching Procedure (TCLP) analysis. The State's position is that subsurface soils must be cleaned so that they will not leach concentrations to the groundwater above the clean-up goal. The validity of the use of an attenuation factor other than 0 must be demonstrated to the State. It was recognized by the team that the discussion was hampered by the lack of real data. Time ran out for the day without discussion on the seventh step of the DQO process, optimize the design.

Friday, 20 November 1992

Friday was devoted to discussion of general DQO issues, and their impact on the RI/FS at MCAS El Toro. The discussion began on the issue of "background". Background issues with regard to soils mainly refer to waste management decisions and determining risk for health exposure. The parameters of concern with regard to the background issue were agreed to be metals, Total Petroleum Hydrocarbon (TPH),

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	and possibly Polynuclear Aromatic Hydrocarbons (PAHs). Other synthetic compounds would by definition be above background simply by being present above detection limits. However, other issues were involved, such as levels of contaminants that were ubiquitous in the community, and the potential for contaminants to migrate on-Station from up-stream sources. John Broderick pointed out that the nondegradation policy of the State applied to water, not soil. Manny Alonzo suggested the use of various software packages were available that analyze data and evaluate background concentrations. Manny suggested that the CLEAN project team evaluate the software and propose which specific statistical options would be used. The use of a multivariate model was suggested. Discussion centered on approaches to determine background to allow waste management decisions, with much attention on statistical methodology. Andy Piszkin proposed that background for waste management decisions be based on the most conservative statistical measures available under guidance; namely, that power be established at 0.90, and confidence be established at 0.80. The agencies agreed with this proposal, but pointed out that the Navy should reconsider the consequences of the 0.8 confidence level. Thus, based on mean concentrations of metals and TPH in upgradient and background soil samples, a list of potential contaminants would be prepared, and analyzed with a multivariate statistical software package, with power at 0.90 and confidence at 0.80. Samples from wastes falling outside the multivariate background "envelope" would be disposed as designated waste (unless levels are above hazardous levels, in which case the waste would be disposed as hazardous waste). Other discussion focused on the possible need to break the Phase II Remedial Investigation into more than one sub-component, because the process is supposed to be iterative, the Feasibility Study may require additional data, and the design may be more effective if staged. This could have impact on the schedule agreed to by the parties to the Federal Facilities Agreement (FFA). The team agreed on the potential need, but took no action at this time. Discussion then turned to Phase II plans and documents. It was agreed that the MCAS El Toro DQO document would be modeled after the one prepared by MCAS Yuma (modified because of the availability of Phase I data). The DQO document will form the basis for the MCAS El Toro Phase II Work Plan and Sampling Plan. For example, DQO sections for each site could be incorporated as appendices in the Work Plan. This would allow maximum design flexibility. Finally, discussion focused on subsurface soils, especially on the issue of where to establish the boundary between surface soils and subsurface soils. Various proposals were put forth: 6 inches (human risk assessment requirements); 18 inches (plant uptake); 1/2 the diameter of a disk used to turn soils (human exposure); 4 feet (depth of most utilities); and 20 feet (depth used at Norton AFB based on remedial strategies). Because remediation could occur at any depth, and the issue of cutpoints in subsurface soils is still being addressed, it was agreed to postpone this discussion. <u>Action Items and Decisions</u> 1. DTSC will provide the team with a list of chemicals potentially used at Norton AFB.

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2. LCDR Serafini will locate a copy of the MCAS El Toro Master Plan and share the information with the team so that the question of "institutional control" could be evaluated as an option at MCAS El Toro.

3. CH2M HILL will provide the team a list of "hits", or compounds that were detected in Site 16 soils, by 12/9/92 for use at the December 16-17 manager's meeting.

4. Background in soils to support waste management decisions will be calculated with statistics on background soil samples with confidence set at 0.80, and power set at 0.90.

5. Technical support groups were established to study various issues designated by the team and to provide information to the team to support decisions. Initial reports to the team will be due at the January 1993 Managers Meeting. Information will be presented informally to the team (i.e., not deliverable quality) at least 2 weeks before a meeting where a decision may be made. The following teams, their preliminary scope, and the technical lead group were established:

   A. Chemical/Analytical Team--development of "hit" list; development of MDRDs; determination of detection limits. (CH2M HILL, lead)

   B. Cutpoint Team--compilation of criteria and ARARs, BATs, and PRGs; proposal of cutpoints for compounds. (Bechtel, lead)

   C. Geophysics Team--research and selection of models to determine attenuation and potential of compound to leach to groundwater from subsurface soils; Feasibility Study issues. (Jacobs, lead)

   D. Statistics Team--research and selection of software models using multivariate techniques to evaluate background; use of statistics to evaluate Phase I RI/FS data. (Bechtel, lead)

   CH2M HILL will perform the actual analysis. The lead technical group will provide review and technical input.

6. CH2M HILL will model the DQO document after the one prepared by MCAS Yuma (modified because of the availability of Phase I data). This DQO document will form the basis for the Phase II Work Plan and Sampling Plan. DQO sections for each site will be added to the Work Plan as appendices.

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Attendees

Liz Miesner/CH2M HILL-SFO
Alta Turner/CH2M HILL-SEA
Sylvia Ross/CH2M HILL-SCO
Artemis Antipas/CH2M HILL-SEA
Larry Nuzum/Code 1812
Barbara Johnson/NEESA
Rex Bryan/Viar
Jeff DuBose/Viar
James Price/Viar
Kathy Brewer/CH2M HILL-CVO
Renee Royal/Code 1812.RR
Arthur Chasin/MCAS El Toro
David Guth/IT Corp
Robin Smith/IT Corp
Amir Matin/JEG-PAS
Irene Findikaki/Bechtel
Gary Stewart/RWQCB
Bryant Wong/CH2M HILL-SCO
Peter Torrey/CH2M HILL-SCO
John Dolegowski/CH2M HILL-SCO
Mike Arends/CH2M HILL-SCO
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