N68311.000971
NAVSTA LONG BEACH
SSIC #5090.3

DEPARTMENT OF THE NAVY
BASE REALIGNMENT AND CLOSURE PROGRAM OFFICE
SOUTHWEST DIVISION, NAVAL FACILITIES ENGINEERING COMMAND
1420 KETTNER BOULEVARD, SUITE 507
SAN DIEGO, CALIFORNIA 92101-2404

11011
Ser 56LB.JH/0767
June 18, 1997

Mr. Alvaro Gutierrez
California Environmental Protection Agency
Department of Toxic Substances Control
245 W. Broadway, Suite 350
Long Beach, CA 90802-4444

Dear Mr. Gutierrez:

Enclosed are two (2) copies of the Responses to Review Comments regarding the Draft Expanded Site Inspection Work Plan for Installation Restoration Site 14 at the Naval Station Long Beach, for your review and distribution. Please provide concurrence on these responses by July 2, 1997, so we can finalize the work plan and start field work immediately.

For questions or concerns regarding this document, please contact the undersigned at (619) 532-2004 extension 22, or Mr. Aklile Gessesse, of Bechtel National Inc. at (310) 807-2454.

Sincerely,

JOHN HILL
Remedial Project Manager
By direction of the Commander

Encl:
(1) Responses to Review Comments Regarding the Draft Expanded Site Inspection Work Plan for Installation Restoration Site 14 at the Naval Station Long Beach, Long Beach, California

Distribution:
Mr. Martin Hausladen, USEPA (1 copy)
Mr. Hugh Marley, RWQCB-LA (1 copy)
Mr. John Christopher, Cal-EPA (1 copy)
Mr. Chris Leadon, SWDIV (1 copy)
Mr. Alan Lee, SWDIV (1 copy)
Mr. John Rogers, SWDIV (1 copy)
Mr. Paul Maize, ROICC Long Beach (1 copy)

BECHTEL NATIONAL INC.

CLEAN II TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. N-68711-92-D-4670 **Document Control No.** CTO-0134/0018

File Code: 02181/0222

TO: Commanding Officer
Naval Facilities Engineering Command
Southwest Division
Mr. Richard Selby, Code 57S.RS
Building 127, Room 110
1220 Pacific Highway
San Diego, CA. 92132-5187

DATE: 18 June 1997
CTO #: 134
LOCATION: Naval Station Long Beach

FROM: _____
Program / Project Manager

_____
Operations Manager

DESCRIPTION: Responses to Agency Comments on Draft Expanded Site Inspection Work Plan for Installation Restoration Site 14 Former Naval Station Long Beach

TYPE: Contract Deliverable (Cost) _____ CTO Deliverable (Technical) _____ Other: X

VERSION: N/A (e.g., Draft, Draft Final, Final, etc.) REVISION No: N/A

ADMIN RECORD: (PM to Identify) Yes [X] No [ ] U.S. EPA Category _____ Confidential _____

SCHEDULED DELIVERY DATE: 6/18/97 ACTUAL DELIVERY DATE: JUN 23 1997

NUMBER OF COPIES SUBMITTED: 1o/5c/5e

COPIES TO (Include Name, Navy Mail Code, and No. of Copies):

SWDIV:
- J. Rogers - 5723.JR (1c/1e)
- J. Hill - 56LB.JH (1c/1e)
- C. Leadon - 5721.CL (1c/1e)
- A. Lee - 56LB.AL (1c/1e)
- L. Protocollo - 56LB.LP (1c/1e)

BECHTEL:
- J. Kluesener (1c/1e)
- K. Kapur (1c/1e)
- A. Gessesse (1c/1e)
- C. Phillips - AR (2c/2e)
- CTO File (1c/1e)
- PMO File (1c/1e)

OTHER (Distribution done by Bechtel):
- M. Hausladen, USEPA (1c/1e)
- A. Guitierrez, Cal-EPA, DTSC (1c/1e)
- J. Christopher, Cal-EPA,DTSC (1c/1e)
- P. Maize, ROICC Long Beach (1c/1e)
- H. Marley, RWQCB-LA (1c/1e)

Date/Time Received

Bechtel
Southern California
12440 East Imperial Highway
Norwalk, CA 90650-3134

CLEAN II Program
Bechtel Job No. 22214
Contract No. N68711-92-D-4670
File Code: 02181/0222

IN REPLY REFERENCE: CTO-0134/0018

June 18, 1997

Commanding Officer
Naval Facilities Engineering Command
Southwest Division
Mr. Richard Selby, Code 57CS.RS
Building 127, Room 110
1220 Pacific Highway
San Diego, CA 92132-5187

Subject: Responses to Navy Comments on
Draft Expanded Site Inspection Work Plan for
Installation Restoration Site 14
Former Naval Station Long Beach, Long Beach, California

Dear Mr. Selby:

Enclosed are the responses to Agency comments on the Draft Expanded Site Inspection Work Plan for Installation Restoration Site 14 at the Former Naval Station Long Beach, prepared under Contract Task Order (CTO) - 0134. Copies of the responses are also being forwarded to regulatory agency representatives for their review and concurrence.

If you have any questions, please contact the undersigned or Aklile Gessesse at (562) 807-2454.

Very truly yours,

Krish Kapur
Project Manager

Enclosure: Responses to Navy Comments on
Draft Expanded Site Inspection Work Plan for
Installation Restoration Site 14

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

9 April 1997

Comments by: California Regional Water Quality Control Board – Los Angeles Region
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
1	*Include isoconcentration maps whenever soil and groundwater results are presented on a site map, as in Figures 2, 3, and 4.*	*Isoconcentration maps are presented on site maps in the Site Inspection Report, and therefore a reference to these figures will be added to the Final Expanded Site Inspection (ESI) Work Plan.*
2	*Section 3.1 states that the soil screening criteria for this site has not been determined. This Board's Guidance for VOC-Impacted Sites, dated March, 1997, provides detailed instructions on selecting soil screening criteria. The screening criteria can be modified to include soil that is in contact with non-drinking water, as at this site.*	*Rather than comparing soil sample analytical results to soil screening criteria, soil samples will be collected from step-out locations until results for tetrachloroethene (PCE) and its transformation products (including 1,1-dichloroethene [DCE], 1,2-DCE, trichloroethene [TCE], and vinyl chloride) are nondetect. Section 3.1 (and other pertinent sections mentioning soil screening criteria) will be revised to indicate that the extent of soil contaminants will be delineated to nondetect (the laboratory detection limit).*
3	*Please notify us as to when the mobile laboratories will be on site, in order that we may observe their operation.*	*The California Regional Water Quality Control Board – Los Angeles Region will be provided with advance notification as to when the mobile laboratory will be on site.*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

12 May 1997

Comments by: United States Environmental Protection Agency, Region IX
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
1	*Section 2.2, p. 2-2. Soil gas samples were collected from shallow and deep intervals, but depth intervals for shallow and deep samples were not included in the text. Please provide this information.*	*Outside of Building 46, samples were typically collected from depths of approximately 3 and 6 feet (ft) below ground surface (bgs); sampling depths inside of the building were slightly deeper (by 0.5 to 2.0 ft), to compensate for the difference between the elevated floor slab and ground level. A sentence indicating this will be added to the text.*
2	*Section 3.0. The data quality objectives (DQO) section indicates that information to is needed to conduct a fate and transport analysis but the contaminant fate and transport analysis is not discussed in terms of the DQO process. State how the fate and transport analysis relates to the statement of the problem (Step 1), which samples will be analyzed for parameters needed for a fate and transport analysis (Step 5), decision errors associated with a fate and transport analysis (Step 6), and a fate and transport sampling design (Step 7).* *Please include a discussion of how many samples from each model layer will be analyzed for parameters that will support the fate and transport analysis and how these samples will be chosen.*	*The level of planned fate and transport analysis is limited to transport of contaminants in shallow groundwater downgradient to a potential surface discharge point. No extensive, detailed modeling is planned at this time. If, based on ESI results, more detailed modeling appears to be warranted, it will be conducted at a later date.* *The references to fate and transport modeling will be removed from the DQO process discussion in Section 3. The DQO primary decision question for the ESI is whether the vertical and lateral extents of contamination in soil and groundwater are defined relative to respective soil and groundwater screening values. However, fate and transport modeling will not be used to define screening criteria for the ESI work. Fate and transport modeling will not be used to define vertical and lateral extents, and is therefore not a required part of the DQO process for the ESI. Fate and transport modeling will, however, be included in the data evaluation, as discussed in Section 4, as a tool for evaluating the hydrogeology conceptual model and potential contaminant migration.* *Other than analytical sampling and collection of samples for defining stratigraphy, which are both primary inputs for modeling, the work plan also includes measurements of water levels (from existing wells and a maximum of ten new wells) and soil property tests (maximum of ten samples to be analyzed for grain size, moisture, and density).*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

12 May 1997

Comments by: United States Environmental Protection Agency, Region IX
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
3	*Section 3.1, p.3-1, paragraph 3, second sentence. This sentence is misleading. Based on the data summary in Section 2.4, it would be more accurate to state that the highest detected concentration of PCE was found in a sample that included groundwater and visible free-phase organic liquid. Please revise the sentence.*	*The comment is acknowledged. The sentence will be revised as requested in the comment.*
4	*Section 3.1, p. 3-2, last bullet. The summary of groundwater problems is incomplete. According to Section 2.4, the extent of PCE, TCE, 1,1-DCE, and 1,2-DCE in groundwater has not been determined. Please revise the summary of groundwater problems to include the need to delineate the extent of TCE, 1,1-DCE, and 1,2-DCE.*	*The bullet, as written, indicates that the primary question regarding the groundwater beneath the IR Site 14 area is whether the lateral and vertical extents of the PCE and transformation products, at concentrations exceeding the designated screening criteria, are defined in the groundwater. The bullet will be revised to note that the transformation products include TCE, 1,1-DCE, and 1,2-DCE.*
5	*Section 3.7, p. 3-12, first bullet. It is not clear why samples will only be collected to a depth of 8 feet when PCE DNAPL was found at a depth of 11 feet. Please explain.* *DNAPL migrates vertically until an impervious layer is reached; at an impervious layer PCE tends to pool and/or spread laterally. If a more permeable area (or crack or roothole) is encountered by the DNAPL, migration will again proceed vertically. This often results in DNAPL residual "fingering" in different directions at several different levels in the subsurface. The soil sampling design does not appear to take the behavior of PCE in a subsurface environment into consideration.*	*The proposed soil sampling depths, 0.5 to 2 ft bgs and 6 to 8 ft bgs, will target shallow soil and the capillary fringe, respectively. The PCE DNAPL at 11 ft bgs is in the saturated zone, which will be the target of groundwater sampling.* *The proposed groundwater sampling program will consider the effect of finer-grained, less permeable intervals (as evident from soil borings and CPT soundings) possibly resulting in "fingering," by including collection and analysis of groundwater samples at the depth of contacts between coarser-grained and underlying finer-grained lithologies.*
6	*Section 4.1. The draft final work plan should be issued after the soil field screening criteria have been determined.*	*Rather than comparing soil sample analytical results to soil screening criteria, soil samples will be collected from step-out locations until results for PCE and its transformation products (including 1,1-DCE, 1,2-*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

12 May 1997

Comments by: United States Environmental Protection Agency, Region IX
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
		DCE, TCE, and vinyl chloride) are nondetect. Pertinent sections of the text (those mentioning soil screening criteria) will be revised to indicate that the extent of soil contaminants will be delineated to nondetect (the laboratory detection limit).
7	*Table 4.2. The screening criteria for deeper groundwater for cis-1,2-DCE and trans 1,2-DCE is deceptive because the listed criteria do not apply to each compound, but to the sum of the concentrations. One way to present this more clearly is to include the number (criterion) for cis-1,2 DCE and simply footnote the space for trans-1,2-DCE.*	*Note "f" in Table 4.2, as written, explains that the listed screening criterion is applicable to the sum of cis-1,2-DCE and trans-1,2-DCE.*
8	*Section 4.3. Knowing that a fate and transport analysis will be conducted before sampling provides a good opportunity to plan for the collection of site specific model input data. Specify which flow and transport model input parameters will be site specific, which will be based on data collected from nearby sites, and which will be based on literature reviews.*	*Chemical properties for the fate and transport modeling will be based on literature data. Chemical properties include organic carbon partition coefficient, Henry's law constant, solubility, air diffusion coefficient, and degradation rate. Soil properties and hydraulic parameters for the modeling will be based on site-specific and LBNSY-specific measurements. Measured properties and parameters will include soil organic carbon content, bulk density, porosity, moisture content, hydraulic conductivity, saturated thickness, hydraulic gradient, and groundwater depth. Adjustments for parameters without measurements or with a wide range in literature values, such as dispersivity, vertical anisotropy, and degradation, will be considered during model calibration to measured water levels and contaminant extent.* *The ESI will include evaluating the extent of the DNAPL, by monitoring for indications of potential migration from the identified shallow DNAPL pool (evident in one well only), and evaluating migration of the dissolved plume at various depths.*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

12 May 1997

Comments by: United States Environmental Protection Agency, Region IX
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
9	*Section 4.3, p. 4-4, last paragraph. A density driven model should be considered to model where DNAPL has traveled, not for groundwater density. Please clarify the goal of the modeling.*	*The effect of groundwater density (from variations in dissolved solids) on contaminant migration is likely not significant, but will be evaluated as a potential mechanism affecting migration. Use of a multiphase model that evaluates DNAPL movement as a separate phase is not intended because of the large uncertainties indicated by industry-wide experience in such modeling.*
10	*Section 5. Some of the information in this section is discussed in the QAPP, e.g., quality control samples and decontamination procedures, but the QAPP is not referenced. Where appropriate include references to the QAPP. Include, or reference the QAPP sections on sample location survey and equipment calibration.*	*The comment is acknowledged. As requested, references to the QAPP will be added where appropriate.*
11	*Section 5.2.1, p. 5-3, paragraph 2. Soil borings are planned immediately adjacent to several CPT locations. This provides an opportunity to calibrate/interpret CPT soundings. Include a discussion of how this information will be used to provide an interpretation of CPT data specific to this site.*	*The comment is acknowledged. Soil borings are planned immediately adjacent to three CPT locations specifically to calibrate/interpret the CPT soundings. A sentence will be added to the text that explains this, noting that the CPT sounding profiles will be compared to the boring logs for calibration purposes, to enable accurate interpretation of previously conducted CPT soundings as well as any additional CPT soundings.*
12	*Section 5.2.2, p. 5-3, paragraph 1. Drilling companies are licensed, not registered by the State of California.*	*The comment is acknowledged. The second sentence in Section 5.2.2, page 5-3, paragraph 1 will be revised as requested by the comment.*
13	*Section 5.2.2., p. 5-4, last sentence. It is not clear how the use of large-diameter hollow stem augers will minimize the potential for cross-contamination. Please explain. Also, single cased wells are not usually considered to provide sufficient protection when DNAPLs and/or significant contamination are present; generally, telescoped casings and pressure grouting are necessary to ensure that*	*The probable locations of groundwater monitoring wells are outside the known limits of the DNAPL pool. The use of large-diameter hollow stem augers at these locations is proposed to temporarily "case off" the shallow saturated zone, by setting the base of the large-diameter augers in the first-encountered finer-grained interval and leaving them in place while drilling through with smaller-diameter hollow stem augers and setting the deep wells.*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

12 May 1997

Comments by: United States Environmental Protection Agency, Region IX
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
	contamination of deeper water-bearing zones does not occur.	
14	*Section 5.2.3.3, p. 5-7. Wells should also be checked for NAPLs before purging and sampling.*	*The comment is acknowledged. A sentence indicating that wells will be checked for NAPLs before purging and sampling will be added to Section 5.2.3.3, page 5-7.*
15	*Section 5.2.3.4, p. 5-9. This section indicates that rinsate blanks will be collected from bailers. Please indicate if this also applies to disposable bailers.*	*If disposable bailers are used, a new bailer will be used for each well; used bailers will not be reused after they are decontaminated. For this reason, rinsate blanks will not be required for disposable bailers.*
16	*Section 5.2.4.2, p. 5-10. An absorbent packing material should be used in case a sample container or ice bag leaks.*	*Ice and groundwater samples will be sealed in separate plastic bags within sample coolers to avoid leakage.*
17	*Section 5.2.7.2, p. 5-13. The description of the decontamination procedures does not match the description contained in the QAPP. Please change the text so that the two descriptions match. Describe the procedure for decontaminating purge pumps.*	*The text in Section 5.2.7.2 will be revised to be consistent with Section A.4.2 of the Quality Assurance Project Plan (QAPP). The outside of submersible pump(s) used for purging groundwater monitoring wells during development and sampling, and attached hoses and wires, will be decontaminated using high-pressure hot water rinsing, and a detergent and potable water solution, followed by distilled water rinsing. The inside of the pump(s) will be decontaminated by running a detergent and potable water solution through the operating pump (if manufacturer's instructions permit such operation), followed by running tap water and then distilled water through the pump(s). Descriptions of the method to be used for submersible pump decontamination will be added to the text in Sections 5.2.7.2 and A.4.2.*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

12 May 1997

Comments by: United States Environmental Protection Agency, Region IX
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
QUALITY ASSURANCE PROJECT PLAN GENERAL COMMENTS		
	The Quality Assurance Plan is overly generic and does not include the level of detail required to define the procedures to ensure quality data are obtained from IR Site 14. The QA Plan would be more useful if pertinent SOPs and documents describing procedures to be followed were included as appendices rather than merely being referenced. Alternatively, provide documentation forms to demonstrate that field and laboratory personnel have read and are familiar with the cited procedures and SOPs.	***The QAPP does not include certain details presented in CLEAN II Programmatic Standard Operating Procedures (SOPs). These SOPs have been issued to and approved by the regulatory agencies; the details are omitted from the QAPP to avoid unnecessary repetition.***
SPECIFIC COMMENTS		
1	***Section A.3.1, p. A-5. Include discussion of the confidence level required or desired that both the horizontal and vertical extent of the free phase DNAPL is accurately characterized. The desired confidence level directly determines the number of samples required and their spacing.***	***The lateral extent of the shallow DNAPL pool was delineated by the SI. The ESI sampling approach for defining vertical extent (and lateral extent in deeper intervals) is judgmental rather than random, and therefore a discussion of confidence level is not applicable.***
2	***Section A.3.1, p. A-6. The third bullet describing "Inputs needed for the above decisions..." implies that field screening criteria for delineation of contamination in soil will be established or determined during the investigation. Criteria to define presence or absence of contamination must be established and presented in the QAPP so that appropriate analytical methods and detection limits can be specified to achieve the goal.***	***See response to Comment 3, below.***
3	***Section A.3.1, p. A-7. The discussion of decision rules for the field program mentions "designated field screening levels" and "field screening criteria". Field screening***	***Rather than comparing soil sample analytical results to soil screening criteria, soil samples will be collected from step-out locations until results for PCE and its transformation products (including 1,1-DCE, 1,2-***

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

12 May 1997

Comments by: United States Environmental Protection Agency, Region IX
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
	levels and criteria must be defined in the plan and must be based on potential regulatory criteria which may apply to soil and groundwater contamination levels. Detection limits for field screening and laboratory analysis must, at a minimum, meet these potential regulatory criteria.	*DCE, TCE, and vinyl chloride) are nondetect. Pertinent sections of the text (those mentioning soil screening criteria) will be revised to indicate that the extent of soil contaminants will be delineated to nondetect (laboratory detection limits).* *Groundwater sample analytical results will be compared to field screening criteria that are described in Section 4.2 of the Draft ESI Work Plan. It is proposed that risk-based concentrations (RBCs) be used as screening criteria for first encountered groundwater, at approximately 10 ft bgs, which is reasonable since a maintenance/utility worker is not anticipated to be exposed to groundwater deeper than 10 ft bgs. For the deeper groundwater, the California Ocean Plan (COP) Water Quality Objectives (WQOs) will be used as screening criteria. In the absence of a COP WQO for an analyte, other criteria protective of aquatic environments, such as U.S. EPA National Ambient Water Quality Criteria, will be utilized. Table 4-2 in the Draft ESI Work Plan presents the RBCs, the COP WQOs, and the proposed field screening criteria for groundwater.* *Tables showing detection limits for proposed mobile and stationary laboratory analytical methods will be added to the QAPP.*
4	*Section A.3.2, p. A-7. It is stated that "Interface probes or clear bailer will be used to determine the presence of any potential free-floating product and the product thickness." The contaminants of concern at IR Site 14 are tetrachloroethene (perchloroethylene) and its degradation products. These compounds are denser than water and sink to the bottom of the aquifer or a monitoring well (if the well intercepts the DNAPL phase). Since free phase DNAPL has been found at the site, looking for floating product would not discover sources of contamination.*	*The comment is acknowledged. The third sentence in Section A.3.2, first paragraph, will be revised as follows: "Interface probes or clear bailers will be used to determine the presence of DNAPL (and thickness, if present) in the bottom of each well." The reference to free-floating product will also be deleted from the first sentence of the next paragraph. A similar description of this method for determining the possible presence of DNAPL in the bottom of monitoring wells will also be added to the text in Sections 5.2.2.5 and 5.2.3.3.*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

12 May 1997

Comments by: United States Environmental Protection Agency, Region IX
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
	Samples must be collected from the bottom of the well before the well is purged to determine if DNAPL has been intercepted and is present. Likewise, for soil sampling, the vertical extent of contamination must be determined; this requires soil sampling and boring down to a less permeable region of the aquifer. See Comment Number 1 above.	*The vertical extent of contamination will be addressed by the proposed groundwater sampling program. The effect of finer-grained, less permeable intervals (as evident from soil borings and CPT soundings) which could possibly result in "fingering" will be considered by including collection and analysis of groundwater samples at the depth of contacts between coarser-grained and underlying finer-grained lithologies.*
5	*Section A.3.2, p. A-7. It is stated that oxidation reduction potential (ORP) and dissolved oxygen will be measured periodically in groundwater wells. ORP and dissolved oxygen measurements must be performed using a down-well probe or an enclosed flow cell since these two parameters instantaneously change on exposure of water to atmospheric oxygen.*	*The comment is acknowledged. The ORP and dissolved oxygen measurements will be performed using a down-well probe or an enclosed flow cell.*
6	*Section A.3.4, p. A-9. The bullet states that "water quality parameters like dissolved manganese..." will be determined. Definitively state what parameters will be analyzed.*	*Water quality/general chemical analyses that may be performed during the ESI are discussed in Section 5.3, and include dissolved iron and manganese, total organic carbon (TOC), total dissolved solids, alkalinity (including hydroxides, carbonates and bicarbonates), total Kjeldahl nitrogen, methane, ethane, ethene, hydrogen ion activity (pH), and anions including chlorides, nitrates, and sulfates. In addition, field measurements of specific conductivity, temperature, pH, turbidity, ORP, dissolved oxygen, and ferrous iron (Fe^{+2}) may also be conducted on certain field-designated groundwater samples. The text in Section A.3.4 lists these possible analyses.*
7	*Sections A.3.4, p. A-9. Specify laboratories performing both field and off-site analyses.*	*CLEAN II programmatic laboratory subcontractors will conduct mobile laboratory and stationary analyses, however, the specific laboratories have not yet been selected.*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

12 May 1997

Comments by: United States Environmental Protection Agency, Region IX
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
8	*Section A.3.4.1, p. A-9. Provide a table specifying detection limits required and potential regulatory criteria. Detection limit requirements must be determined prior to sample collection and analysis so appropriate analytical methods can be selected to meet these criteria. Acceptance of analytical data and review of reported detection limits to determine if they meet potential criteria after the investigation is complete is inappropriate and indicates a lack of planning to achieve required DQOs.*	*The comment is acknowledged. Tables showing detection limits and comparison to potential regulatory criteria for proposed mobile and stationary laboratory analytical methods will be added to the QAPP.*
9	*Section A.3.4.4, p. A-10. Include a copy of field laboratory SOPs as an Appendix to the QA Plan.*	*The QAPP does not include certain details presented in CLEAN II Programmatic SOPs. Controlled copies of the SOPs have been issued to the regulatory agencies. Comments recieved from the agencies have been incorporated and revisions issued to the holders of the controlled copies. The details are omitted from the QAPP to avoid unnecessary repetition.*
10	*Tables A.3.2 through A.3.6. Many of the entries for precision or accuracy criteria indicate "not established" or "not applicable". While analytical methods may not have specified criteria, most laboratories have established in-house control criteria by use of control charts which are routinely used to determine if analytical methods are "in control". A discussion of acceptable project precision and accuracy criteria should be included irrespective of laboratory or method criteria. In addition, precision for water quality parameters can be assessed by duplicate or replicate sample measurements.*	*The precision and accuracy criteria stated in A.3.2 through A.3.6 are guidance limits esablished by the method or by programmatic technical specification to be used if sufficient Navy Clean-specific data are not available to generate in-house control criteria. A discussion of acceptable project precision and accuracy criteria will be included in the QAPP.*
11	*Table A.3.1, p. A-9. Include Fe^{+2} in the table since Section 5.3 indicates that some groundwater samples may be analyzed in the field for this parameter.*	*The comment is acknowledged. Table A.3.1 will be revised to include Fe^{+2}.*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

12 May 1997

Comments by: United States Environmental Protection Agency, Region IX
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
12	*Table A.3.6, p. A-22. Include data quality standards for total Kjeldahl nitrogen and total organic carbon.*	*The comment is acknowledged. Table A.3.6 will be revised to include data quality standards for TKN and TOC.*
13	*Section A.6.2.1, p. A-36. Approximately 10 - 25% of all samples, not just samples with detected analytes, should be submitted to an off-site laboratory to demonstrate that field laboratory results accurately reflect sample concentrations. The potential for false negative results is the major concern in an investigation of this type.*	*The comment is acknowledged. The text in Section A.6.2.1 will be revised to indicate that 10 to 25 percent of all samples (not just samples with detected analytes) will be submitted to an off-site laboratory to demonstrate that field laboratory results accurately reflect sample concentrations.*
DATA MANAGEMENT PLAN		
1	*Section C.3.5, p. C-7. Please indicate whether double blind entry will be used for manual data entry or explain how manual data entry will be verified to insure accuracy.*	*Double blind entry will not be used for manual data entry. Manual data entry will follow the established programmatic SOPs.*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

14 May 1997

Comments by: Department of Toxic Substances Control
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
GENERAL AND SPECIFIC COMMENTS		
1	*It is apparent the groundwater flow direction is controlled by the Southern California Edison (SCE) Generating Station located to the northeast of IR Site 14. Currently, there are no future plans that the dewatering system at the SCE facility will not continue operating. Therefore, the Navy must consider the influence SCE dewatering system has with regard to the fate and transport of the contaminates detected in groundwater at IR Site 14. If warranted, a contingency plan designed to detect and address constituent of concern at the SCE facility should be developed. Additionally, if after the completed site characterization and development of an adequate fate and transport model show contaminates migrating toward the dewatering system, SCE should be notified of the situation.*	*The potential influence of the SCE dewatering system on the fate and transport of contaminants detected in IR Site 14 groundwater will be evaluated by the proposed fate and transport analysis discussed in Section 4.3. The level of planned fate and transport analysis is limited to transport of contaminants in shallow groundwater downgradient to a potential surface discharge point (specifically, the SCE Generating Station dewatering system). No extensive, detailed modeling is planned at this time. If, based on ESI results, more detailed modeling appears to be warranted, it will be conducted at a later date.*
2	*The Draft Work Plan indicates Building 46 will be demolished (page 43). Given this information, further characterization of the contamination beneath the structure may be needed for future soil excavation activities.*	*The contamination beneath the northern portion of Building 46 was characterized by the SI. Additional soil and HydroPunch®-type groundwater samples will be collected beneath the southern portion of Building 46 during the ESI.*
3 *a*	*Section 3.4 - Define the Study Boundary* *This section states the Gaspur aquifer will be studied under a different investigation. Please include the name of the investigation in this section. However, in Section 3.7 it is stated CPT soundings to a depth of up to 80 feet below land surface (bls) will be completed at three locations for hydrogeological and stratigraphic information. Since the CPT equipment will already be mobilized on site, DTSC requests groundwater samples be collected and analyzed at various depths, including 80 feet, for chlorinated*	*The vertical boundary selected for the ESI groundwater analytical sampling is defined by the top of an extensive finer-grained interval (based on the 8 SI CPT soundings), which occurs at an elevation of approximately -40 ft MLLW. This finer-grained interval is predominantly silt and sandy silt, but contains some interbedded clay, silty sand, and sand. The interval is apparently continuous beneath the site, ranging in thickness from approximately 10.5 to 15 feet. The upper portion of the interval is a sandy silt to silt with a minimum thickness of 3 ft. The top of this interval was selected as the vertical boundary for ESI sampling*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

14 May 1997

Comments by: Department of Toxic Substances Control
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
GENERAL AND SPECIFIC COMMENTS		
	solvents. This data may 1) provide some information as to the impact from the overlying contaminates to the Gaspur Aquifer, 2) prevent accidental cross contamination from a DNAPL pool to the underlying groundwater.	*because it is unlikely that contaminants have migrated vertically through this interval. If contaminants are found by the ESI at levels above the screening criteria in groundwater at the top of this interval, however, a recommendation will be made in the ESI report to investigate the underlying Gaspur Aquifer. The investigation (if required) is presently unnamed.*
b	*Bullet one states the "surficial coarse-grained interval" is entirely above the water table, yet groundwater analytical data is reported as shallow as seven feet bls on Figure 2.4. Please reconcile this discrepancy.*	*Depths reported on Figure 2-4 are HydroPunch®-type sample and monitoring well screen interval tops and bottoms (see Note 1 on the figure). The depth of the water table at each shallow sample location is generally within, but not at the top of, the indicated screen interval. As is noted in Section 3.4, the surficial coarse-grained interval is encountered from just below grade to depths of about 5 to 10 ft bgs, depending on the location. An underlying, finer-grained, generally 2- to 3.5-ft thick interval extends at most locations to depths ranging between 9 and 11.5 ft bgs, with the water level typically occurring either within this finer-grained interval, or as much as approximately 1 foot below its base.*
c	*Second paragraph, page 3-9, please list in this paragraph the specific geochemical parameter that will be used for the purpose of evaluating natural attenuation.*	*Section 5.3 discusses the water quality/general chemistry laboratory analyses that may be used to support the study of natural attenuation and fate and transport. Stationary laboratory analyses that may be performed include dissolved iron and manganese, TOC, TDS, alkalinity (including hydroxides, carbonates and bicarbonates), TKN, methane, ethane, ethene, pH, and anions including chlorides, nitrates, and sulfates. In addition, field measurements of specific conductivity, temperature, pH, turbidity, ORP, dissolved oxygen, and Fe^{+2} may be conducted on certain field-designated groundwater samples.*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

14 May 1997

Comments by: Department of Toxic Substances Control
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
GENERAL AND SPECIFIC COMMENTS		
4	*Section 3.5.1 Investigate PCE and Transformation Products in Soil*	
a	*The text states after screening criteria has been established sample locations will be adjusted accordingly. It is expected, by this statement, the final proposed sampling locations will be included in the Draft Final Work Plan. Please confirm this assumption in the response to comments.*	*The final ESI planned sample locations will be included in the Final Work Plan (and are unchanged from the Draft Work Plan). However, step-out groundwater sample locations and monitoring well locations will be selected based on the mobile laboratory analytical results from the planned locations, and therefore those locations can not be shown until the results are available. If the regulatory agencies would like to approve proposed step-out sample and well locations, an agency review meeting will be held onsite once the planned location analytical data are available.*
b	*Soil gas data should be collected in addition to soil matrix samples. DTSC is requesting this data for the following reasons: 1) the upper 20 feet of the subsurface sediments are predominantly classified as coarse grained, and it is well documented that there are inherent problems analyzing VOCs in coarse grained material due to volatilization, and 2) most of the soil sampling locations are at the boundaries of the site and most likely to be somewhat diffused (if indeed the primary source of contamination is located at and around the dock on the north side of Building 46) therefore, more readily detected by soil gas methodology.*	*Soil gas data were collected during the SI for screening purposes, to select vadose-zone soil sampling locations only. No additional soil gas sampling is planned for the ESI, which will focus mainly on the saturated zone and groundwater sampling.*
c	*Figure 3-3, Ten percent of the mobile laboratory samples should be sent to a stationary laboratory for confirmation.*	*The comment is acknowledged. At least ten percent of the mobile laboratory samples will be sent to a stationary laboratory for confirmation.*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

14 May 1997

Comments by: Department of Toxic Substances Control
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
GENERAL AND SPECIFIC COMMENTS		
5	*Section 3.5.2 - Investigate PCE and Transformation Products in Groundwater* *How will soil and groundwater contamination be addressed outside the boundaries of IR Site 14?*	*The proposed ESI will include collection of soil and groundwater samples outside of the boundaries of IR Site 14, to the west, north, and east. Step-out samples will be collected until soil contaminants are delineated to the laboratory detection limit, and groundwater contaminants are delineated to the groundwater screening criteria. The offsite property owner, the Port of Long Beach, has been contacted to obtain offsite access and permission for collecting samples.*
6	*Section 3.6 - Step 6 - Specify Limits in Decision Error* *DTSC agrees with a judgmental sampling approach as IR Site 14 and understands with this method uncertainty cannot be quantified. However, the BCT must agree upon some degree of comfort with regard to the sampling strategy, i.e., sampling coverage. The Draft Work Plan does not provide adequate information as to the sampling approach especially with regard to the step-out samples. Step 6 of the DQO process is the juncture where it is imperative agreement is reached. This is the step that is used to determine what action to take. In this situation the next action would be if and where additional sampling locations should be placed. As presented there is not criteria in Step 6 to make such decisions.*	*Step-out soil samples will be collected until soil contaminants are delineated to the laboratory detection limit. Groundwater contaminants will be delineated laterally and vertically to concentrations below the groundwater screening criteria (COP WQOs). If the regulatory agencies would like to approve proposed step-out sample and well locations, an agency review meeting will be held onsite once the planned location analytical data are available.*
7 *a*	*Section 3.7 - Step 7 - Optimize the Sampling Design* *First Bullet, 1) soil gas samples should be collected and analyzed (see comment 4b, 2) What does "up to 10*	*Soil gas data were collected during the SI for screening purposes, to select vadose-zone soil sampling locations only. No additional soil gas*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

14 May 1997

Comments by: Department of Toxic Substances Control
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
GENERAL AND SPECIFIC COMMENTS		
	locations" will be collected mean? Does it imply a maximum of 10 locations or at least 10 locations will be sampled? Please clarify the intended meaning of the first bullet.	*sampling is planned for the ESI, which will focus mainly on the saturated zone and groundwater sampling. Soil sampling is planned at up to 10 locations, providing contaminants can be delineated to nondetect with this number of locations; otherwise, additional locations will be added.*
b	*Second Bullet, Please collect groundwater samples during the CPT field activities. This approach will maximize the information collected during CPT operations.*	*Although CPT data and HydroPunch®-type samples in many cases may be collected using the same rig, the two methods use separate equipment and require separate "boreholes" (i.e., groundwater samples can not be collected while CPT data are being collected, because the CPT probe and HydroPunch®-type sampler are separate equipment). In the field schedule, HydroPunch®-type sampling follows completion of CPT soundings. Results from all CPT soundings will be evaluated in the selection of deeper groundwater sampling intervals.*
c	*Forth Bullet, What does "up to 10 groundwater monitoring wells will be installed" mean? Please clarify the intended meaning of the forth bullet. What criteria will be used to locate the monitoring wells (i.e., highest concentration detected during the hydropunch field activities)?*	*Installation of groundwater monitoring wells (and the number, placement, and screen interval of the wells) will be determined based on the results of HydroPunch®-type groundwater samples. It is anticipated that up to 4 shallow (water-table-depth), 3 intermediate (screen interval of approximately 30 to 35 ft bgs) and 3 deep (screen interval of approximately 40 to 45 ft bgs) wells will be installed. One well for each of these depth intervals will be installed at or very near the apparent center of the groundwater plume at that depth, and the others will be installed near the plume boundaries.*
d	*Last Bullet page 3-13, Clearly state in this bullet the specific laboratory analysis proposed for water quality samples and provide criteria that will be used to select water sample analyzed by a stationary laboratory.*	*Section 5.3 discusses the water quality/general chemistry laboratory analyses. Stationary laboratory analyses include dissolved iron and manganese, TOC, TDS, alkalinity (including hydroxides, carbonates and bicarbonates), TKN, methane, ethane, ethene, pH, and anions including chlorides, nitrates, and sulfates. In addition, field measurements of specific conductivity, temperature, pH, turbidity, ORP, dissolved*

RESPONSE TO REVIEW COMMENTS
DRAFT EXPANDED SITE INSPECTION WORK PLAN
IR SITE 14, NAVAL STATION LONG BEACH
LONG BEACH, CALIFORNIA

14 May 1997

Comments by: Department of Toxic Substances Control
Response by: Aklile Gessesse, BNI

Number	Comment	Response
	COMMENTS	
GENERAL AND SPECIFIC COMMENTS		
		oxygen, and Fe^{+2} may be conducted. The analyses will be conducted on groundwater samples from new and existing monitoring wells, and will include samples from the center-plume well and at least one plume boundary well for each depth interval (shallow, intermediate, and deep).
8	*Section 4.2 - Groundwater Field Screening Criteria* *Table 4-2, Field Screening Criteria for Groundwater at IR Site 14, a lower boundary for screening criteria for deeper groundwater should be defined (column 5). Since the lower boundary of the site is defined as 40 bls, DTSC suggests "deeper groundwater" be defined as 10 to 40 bls.*	*The comment is acknowledged. The lower boundary for screening criteria for deeper groundwater will be defined as the vertical study boundary, which is defined in Section 3.4 as the top of the -40 ft MLLW Silt. The top of this interval occurs, however, at a depth of approximately 45 to 50 ft bgs. The lower boundary for screening criteria for deeper groundwater will be defined in column 5 of Table 4-2 as 50 ft bgs.*
9	*Section 4.3 - Fate and Transport Model* *Please submit a comprehensive work plan outlining the approach for the fate and transport model in the final draft work plan.*	*The fate and transport model for the ESI is not intended to function as a comprehensive remedial investigation/feasibility study model. Based on the SI sampling results and initial modeling results, detailed modeling may be unnecessary and not required to support remedial decisions. The existing outline of the approach in Section 4.3 is considered adequate for initial evaluation of the ESI sampling results. If recommendations from the ESI include the need for detailed fate and transport modeling, then a future work plan would outline the approach for comprehensive modeling.*