

## **RESPONSE TO RAB COMMENTS ON DRAFT WORK PLAN FOR EXTENDED SITE ASSESSMENT (ESA) AT NEX GAS STATION NTC SAN DIEGO**

**RAB COMMENT 1.** The document overall is well written. There are areas of great detail such as the description of the coveralls that are to be used for personnel protection, yet sections of the actual plan seem general and in some cases vague.

**Response 1:** Areas in the workplan such as personnel protection require extensive detail. The detail of other sections was increased when appropriate.

**RAB COMMENT 2.** In general it appears a large potentially contaminated area is trying to be addressed all at once. The contamination at the site has been there for several years. Obtaining the data from soil gas and in-situ soil sampling and then designing the well layout would make more sense than the approach being used.

**Response 2:** Site Characterization Analysis Penetrometer System (SCAPS), and previous site inspection reports were used as a tool to aid in both the approach for the extended site assessment and in location of the well layout.

**RAB COMMENT 3.** There is no indication of any other investigations which may have been done, other than Chevrons. Mr. Ted Olsen, RAB member and with the City of San Diego Waste Management Department has stated that he has knowledge of some work done on the nearby Quality Inn and the empty bank properties.

**Response 3:** To the BRAC Cleanup Team's (BCT) knowledge there has been no previous investigative field work done at the nearby Quality Inn. During the ESA at the gas station, the BCT gained knowledge that the owner of "the empty bank property" has performed limited subsurface sampling along with geotechnical investigations. The results from this investigation may become available to the BCT in the future.

**RAB COMMENT 4.** The workplan does not address the potential for contamination from the several existing or previously existing hydraulic lifts at NEX.

**Response 4:** The Naval Training Center has determined that the hydraulic lifts will be addressed in the future when they are removed. If they will not be removed, the issue will be re-examined.

**RAB COMMENT 5.** No mention is made in the workplan of when the remaining tanks will be removed. They must be removed or upgraded by December 22, 1998. Is it necessary that all the tanks remain in service? Must gasoline be sold at the station? How much do they sell, and is it worthwhile?

**Response 5:** When the Extended Site Assessment and Treatability Study Reports are issued, the Navy will consider this information in relation to removing the tanks.

**RAB COMMENT 6.** NEX is a UST problem, yet CERCLA (not UST) procedures are being followed. Who is going to do what to whom? Ideas for NEX UST at variance w/those for sites 2, 7, etc. USTs.

**Response 6:** Site 3 is currently following the UST program, not the CERCLA process. The county of San Diego Site Assessment and Mitigation Division (SA/M) is the lead regulatory agency for this project. Given the complex nature of Site 3, the approach is at variance with sites 2, 7, 8, and 9.

**RAB COMMENT 7.** Knowing that gasoline contamination exists at the facility, that leaking pipes may have contributed to the problem and that precision tank tests are not foolproof, strong consideration should be given to removing the tanks.

**Response 7:** Please refer to response to comment 5.

**RAB COMMENT 8.** Whatever remedial option is selected, trying to clean up a site with 30 and 40 year old tanks still in operation is not a good idea for these reasons:

1. The tanks are old.
2. The bottom of the tanks are probably in groundwater, making them more susceptible to corrosion.
3. If they have leaked, the backfill and soil surrounding them likely has high concentrations of gasoline which will exacerbate clean up efforts.
4. Spills from all deliveries will likely continue.
5. Most tank precision tests by their nature test to a standard of 0.01 gallon per hour allowable leak rate. So even if a tank tests light, it may still be leaking.
6. Experience has shown that even tanks that pass precision tests may leak.

The RAB recommends that the decision to leave the old tanks in the ground be revisited and the tanks be removed.

**Response 8:** Please refer to response to comment 5.

**RAB COMMENT 9.** Does not mention NEX Gas Station in Tide.

**Response 9:** Comment acknowledged and incorporated.

**RAB COMMENT 10.** Acronyms and Abbreviations list does not include CFR, STLC, TTLC, and TCLP all of which are used extensively on Page B3-1. These should be included.

**Response 10:** Each attachment (e.g. Attachment A: Field Sampling Plan) has its own acronyms/abbreviations list. The acronyms CFR, STLC, TTLC, TCLP used on page B3-1 are found on the acronyms/abbreviations list for Attachment B on pages Bv-Bvi.

**RAB COMMENT 11.** Section 1.3. The transition between the ESA and remedial action seems abrupt. Where is the selection process described? The objective should be mentioned in the Work Plan title.

**Response 11:** The selection process is described in general terms in Section 3.2.1 and will be described in greater detail in the ESA report. One of the objectives of the ESA is to provide the necessary data to evaluate and propose cleanup levels for the site and then to select appropriate remedial technologies. It would not be appropriate to include this objective in the Work Plan title as it is only one of several project objectives. The ESA objectives are stated in Section 1.1.

**RAB COMMENT 12.** ESA and TS or ESA, w/TS to follow or what? What is promised? When?

**Response 12:** The schedule on page 5-3 of the final workplan indicates that the ESA precedes the TS and provides dates for each.

**RAB COMMENT 13.** Figure 1-1. Arrow to SITE does not refer to Site 3 at Nimitz and Rosecrans. This Vicinity Map should be revised so the arrow does indeed point to the site in question.

**Response 13:** Comment acknowledged and incorporated.

**RAB COMMENT 14:** Section 1-3, para 4: The waste oil tank was removed in May, 1994. Had the tank leaked? What were the results of soil samples taken upon removal? Was an Unauthorized Release Case opened? Information should be provided about the waste oil tank removal.

**Response 14:** Additional information on the waste oil tank removal has been included as Section 1.4.5.

**RAB COMMENT 15.** What is "its in the next to last line?"

**Response 15:** The word "its" in "From 1961 to its removal in May 1994, these materials were collected in the 500-gallon underground waste oil tank and were removed on a monthly basis by a private contractor" refers to the waste oil tank. Sentence has been revised to make this clear.

**RAB COMMENT 16.** Para 2: What was done with the sludge?

**Response 16:** The sludge in the waste oil tank was removed periodically by a private contractor from 1961 to May 1994, when the tank was removed. There are no records of waste disposal prior to 1961. This is documented at the bottom of page 1-7 and top of page 1-14.

**RAB COMMENT 17.** Section 1.4.1, para 1: Describe piping integrity tests. How do tank level monitors and line leak detectors work? When were they installed? What are the results? Integrity testing of USTs was done in February, 1990. Leaks in failed piping were not tested for leaks until May, 1992. Why such a long delay?

**Response 17:** Tank level monitors and line leak detectors were installed in 1991. Regarding the follow-up leak testing, repairs were made prior to 1992.

Piping integrity tests are types of test methods designed to detect leaks in the tank and piping. Also known as "precision testing, and "tightness testing". Some methods use acoustics or chemical tracers to determine the presence of a leak. For most liquid level methods, the UST system must be taken out of service for several hours, and the tank must have a specific level of product before testing. All integrity tank testing methods must be able to detect a leak as small as 0.1 gallon per hour. This detection limit is referred to as a "performance standard", and the test method must be certified through an independent, third-party testing laboratory.

The term "tank integrity test" includes only test methods which are able to detect a leak of 0.1 gallons per hour with a probability of false alarm of 5 percent or less. The test method may either be volumetric or non-volumetric in nature. A "volumetric test" is a tank integrity test that ascertains the physical integrity of an underground storage tank through review and comparison of tank volume. A "non-volumetric test" is a tank integrity test that ascertains the physical integrity of an underground storage tank through review and consideration of circumstances and physical phenomena internal or external to the tank.

"Pipeline leak detector" means a continuous monitoring system for underground piping capable of detecting at any pressure, a leak rate equivalent to a specified leak rate and pressure, with a probability of false alarm of 5 percent or less.

A test for detecting leaks in product piping is known as the "hydrostatic product line test". Various brands of tests exist and are usually done at the time of the tank testing. The line is taken out of service and pressurized, typically at 1.5 times the normal operating pressure. A drop in pressure over time suggests a possible leak. The test must be conducted by a licensed integrity tank tester. In addition, the test type must be capable of detecting a leak equal to or greater than 0.1 gallon per hour. This test is usually required annually for single-wall pressurized product lines, and every three years for suction piping.

**RAB COMMENT 18.** Section 1.4.1 para 2: Tank level moisture cannot detect very small leaks, or prevent overspilling during product delivery.

**Response 18:** This point is correct and we will consider it in our future decisions.

**RAB COMMENT 19.** Section 1.4.2 para 2: Results should be mentioned separately from procedures.

**Response 19:** In a way, this has been done. Paragraph one of Section 1.4.2 discusses analytical methods, while paragraph two speaks to results in very general terms. Specific results are provided separately in Table 1-2.

**RAB COMMENT 20.** Table 1-2 Are these concentrations significant? Table 1.2 shows <3,000,000 ug/l and <1,500,000 ug/l of diesel, what does this mean? An appreciable amount of stoddard solvent is shown in MW-2 and MW-4, no mention is made in text of this. Where could the stoddard solvent have come from, the waste oil tank, the separator?

**Response 20:** The concentrations reported for groundwater samples from wells MW-2, MW-3, and MW-4 are considered "significant" and warrant further investigation. The <3,000,000 ug/l presented on Table 1-2 means TPH as diesel was not detected at or above the indicated value, which would be the laboratory reporting limit. This is stated on the notes at the bottom of the table. During the Site Investigation, Stoddard solvent was detected in groundwater sampled from wells MW-2 and MW-4 at concentrations of 26,000 ug/l and 19,000 ug/l, respectively. Stoddard solvent was reported to have been used in the automotive services department at NEX Gas Station since it began operations in 1950s and was probably collected in the former waste oil tank. One of the objectives of the Phase I investigation was to evaluate the waste oil tank as the potential source of Stoddard solvent. However, Stoddard solvent was only detected at one location (HP-9) during the Phase I investigation.

**RAB COMMENT 21.** For MW-1, MW-2 and MW-4 TPH (gasoline) is shown in soil samples at less than method detection limits, how is this possible?

**Response 21:** Typically, levels below the detection limit are indicated with the symbol "<" before the result or with the qualifier "U" after the result. A review of the data shown on Table 1-2 shows that the levels in MW-1, MW-2, and MW-4 are actually above the method detection limit.

**RAB COMMENT 22.** Section 1.4.3 para 1: The wells should be checked at least quarterly for phase-separated hydrocarbons (PSH), and any appreciable amounts of PSH should be noted. Why were the wells not monitored per SA/M guidelines?

**Response 22:** The wells were last sampled in 1993, when no measurable product was detected. In the meantime, funding was requested and obtained to perform the ESA.

**RAB COMMENT 23.** Section 1.4.4 para 2: "...gas samples were collected at 4.5 to 5 feet below grade...", yet Section 2.3 says groundwater is at 11.1 feet to 14.8 feet below grade. Should try to get samples closer to the water table.

**Response 23:** Section 1.4.4 paragraph 2 describes the historical Phase I investigation. Future soil gas sampling will, of course, consider the groundwater table and height of the capillary fringe.

**RAB COMMENT 24.** Table 1-3a is confusing. Are the detection limits variable? What does 6U or 2.3U mean?

**Response 24:** Table 1-3a and b have been clarified in the final workplan.

**RAB COMMENT 25.** Section 1.5, Table 1-3b: The units (ppb) differ from those in Table 1.3. Is there a conversion? The table is confusing also. Was stoddard solvent detected?

**Response 25:** Section 1.5 and Table 1-3b are not related. Table 1-3b reports NEX Gas Station Phase I investigation (Section 1.4.4) results, while Section 1.5 discusses the Former Chevron Gas Station investigation and results. In any case, the units in Section 1.5 have been revised to be consistent with units used throughout the document. Stoddard solvent was detected at one location (HP-9) at 0.25 mg/L during the Phase I investigation.

**RAB COMMENT 26.** Section 1.5, para 1: The possibility of the Chevron Gas Station's impact on NEX should be more thoroughly evaluated. The TPH detected in HP-8 cries out for a more in-depth assessment of the effects of Chevron's leak on NEX gas station. There is an extremely high possibility that co-mingling of contaminants has occurred. The problem at NEX may not be solely the Navy's.

**Response 26:** The work associated with the ESA will aid in determining the sources of subsurface contamination.

**RAB COMMENT 27.** Section 1.5, para 3, line 6: "... closure may be obtained using cleanup levels justified by a health-based risk assessment." By whom and using what paradigms of risk will these levels be set? A discussion of the exact evaluatory process for determining cleanup levels should be added and the responsible agency named.

**Response 27:** Risk levels described in Section 1.5 will be proposed as part of the Former Chevron Gas Station cleanup activities, not Navy cleanup. Details of the Former Chevron Gas Station risk protocols are currently not available to the Navy, but will be sought in the future.

**RAB COMMENT 28.** Last para, line 1: Expand on suggestion that plume affected NEX site.

**Response 28:** The workplan expands on the suggestion that the adjacent gas station may have impacted the NEX site.

**RAB COMMENT 29.** Section 2.4, para, 1: It is very unlikely that groundwater at NEX is tidally influenced. It's too far from the bay.

**Response 29:** BNI agrees that it is unlikely that the groundwater at the NEX Gas Station site is tidally influenced. Tidal action indicated in Section 2.4 actually refers to the entire NTC San Diego facility.

**RAB COMMENT 30.** Figure 2.1: What is reference level for ground water elevation?

**Response 30:** The reference level for the groundwater elevations is mean sea level. This reference level has been added to the legend on Figure 2-1.

**RAB COMMENT 31.** Section 3.1.3, para 1, line 4: City should be capitalized in City of San Diego.

**Response 31:** Comment acknowledged and incorporated.

**RAB COMMENT 32.** Section 3.2.1, para 1, bullet 1: "... groundwater extraction...", especially in non-beneficial groundwater use area, is questionable, RAB suggest explore an alternative.

**Response 32:** The workplan identifies several options for groundwater remediation.

**RAB COMMENT 33.** Section 3.2.1, para 2: How are samples to be selected for all of these tests? All these tests can run into a lot of money. Samples should be selected wisely, i.e., distinct soil types.

**Response 33:** Sample selection is described in more detail in Section 4 of the FSP.

**RAB COMMENT 34.** As stated previously, soil samples should have been taken when the waste oil tank was removed, and analyzed for heavy metals, TRPH and PCBs at that time.

**Response 34:** The final workplan includes Table 1-4 on page 1-19 showing the analytical results of the soil samples taken at the waste oil UST. The draft and final workplans show that metals, PCB's and petroleum hydrocarbons will be analyzed during the ESA.

**RAB COMMENT 35.** Para 2: Reading would be easier if a reference were given here to FSP as Attachment A.

**Response 35:** Comment acknowledged and incorporated.

**COMMENT 36.** Para 4, line 3: "The data generated will be used to propose appropriate on-site cleanup levels for BTEX based on human-health and ecological risk factors." By whom and using what paradigms of risk will these levels be set? A discussion of the exact evalutory process for determining cleanup levels should be addended and the responsible agency named.

**Response 36:** Preliminary cleanup goals for the site will be proposed to the San Diego County Environmental Health Services, who have approval authority. The evaluation process to be used will be defined by the County, performed by BNI, and included in the Final ESA report.

**RAB COMMENT 37.** Para 5: Paragraph is repeated.

**Response 37:** Comment acknowledged and incorporated.

**RAB COMMENT 38.** Section 3.2.2.1, para 2, "Soil-Gas and In Site..." It would make more sense to do the soil-gas and in-site groundwater sampling before selecting the locations for borings and monitoring wells and before design. This is a large and seemingly comprehensive workplan. But it appears they are trying to design it all at once. Take the pieces one at a time before installing all 14 borings.

**Response 38:** Section 3 of the FSP states that the results of soil-gas and *in situ* groundwater sampling will be used to select locations for off-site wells. The soil-gas sampling has been removed from the field activities for CEO-0064 as stated in the Final Work Plan. *In situ* groundwater sample analysis and results will still be used to select the location of one of the offsite monitoring wells.

**RAB COMMENT 39.** Other people have done assessment work (soil, gas, etc) at nearby locations. What have they found? If others have done work get their information, no need to duplicate work. Soil gas surveys have recently been done across Nimitz Blvd from NEX.

**Response 39:** Please refer to response to comment 26.

**RAB COMMENT 40.** Section 3.2.2.1, para 4, "Subsurface Soil..." Do not use 5 foot intervals blindly. Sample in vadose zone above groundwater where contamination is likely to be found.

**RAB Response 40:** The 5-foot soil sampling interval referenced in Work Plan is the minimum sampling frequency. Additional soil samples will be collected at the discretion of the field geologist based upon field observations and soil sample screening results.

**RAB COMMENT 41.** para 1: "Groundwater Monitoring Well..." Which well will be used as an extraction well? Only 3 wells for vapor extraction? The number of wells to be potentially used for vapor extraction should be closely analyzed.

**RAB Response 41:** The three wells referenced are screened for potential use as vapor extraction/bioventing wells during a TS, not necessarily for full-scale remediation. If vapor extraction is one of the technologies to be tested during the Treatability study, then radius of influence data evaluated from the TS will be used to select vapor extraction well placement and screen intervals for full-scale remediation.

**RAB COMMENT 42.** Use Timeco - Wheaton traffic boxes. They hold up very well.

**Response 42:** Comment acknowledged.

**RAB COMMENT 43.** What is time interval between ground water monitoring episodes. Quarterly monitoring should be instituted to develop a good historical base of groundwater conditions.

**Response 43:** The first episode of groundwater sampling will take place during the ESA field activities (December 1994). The second episode will take place during mobilization for the treatability study (around June 1995). Future monitoring will be performed, but is not part of this contract.

**RAB COMMENT 44.** Section 3.2.2.2: There appears to be a lot of duplication in the soil and groundwater analyzes. If all these tests are being done in the soil, why so many in water, and vice versa?

**Response 44:** All of these parameters need to be analyzed in both soil and groundwater due to the different transport and fate mechanisms of chemical compounds in the two different media. However, the specific analytical parameters (Table A4-1) to be run on each soil and groundwater sample have been slightly revised.

**RAB COMMENT 45.** Section 3.2.2.5: What will be availability of ESA report?

**Response 45:** The draft ESA report will be provided to the public and RAB for review and comment.

**RAB COMMENT 46.** Section 3.2.3.2, para 2: Before saying that influent and effluent samples will be analyzed for these several parameters, wouldn't it be good to select the remedial option and base the analyses on the method selected?

**Response 46:** Section 3.2.2 states that three potential remedial alternatives have been preliminarily identified for the site. Two of the three alternatives listed do not involve groundwater extraction. Data collected during the ESA will be used to evaluate and propose cleanup levels for the site, and to evaluate remedial alternatives. Please see Section 3.2.2.4.

**RAB COMMENT 47.** It sounds here in Section 3.2.3 like some sort of groundwater pump and treat remedial option is anticipated. Let's not put the cart before the horse.

**Response 47:** Please refer to response to comment 46.

**RAB COMMENT 48.** Section 3.2 line 8: Again, sampling only at 5 foot intervals may overlook areas of highest contamination. Sample in vadose zone.

**Response 48:** Please refer to response to comment 40.

**RAB COMMENT 49.** Section 3.3.2: What is time interval between sample episodes?

**Response 49:** Please refer to response to comment 43.

**RAB COMMENT 50.** Top page: Well MW-10; Was waste oil tank a leaker? What about soil samples taken at tank removal?

**Response 50:** Please refer to response to comment 14.

**COMMENT 51.** Para 3, bullet 4: Well MW-15; Why install MW-15 and MW-19? Evaluate soil gas and in-site soil samples before selecting well locations.

**Response 51:** Please refer to response to comment 38. Well MW-15 has been eliminated from the work scope based on recent site data available from SCAPS. The rationale for locations of soil borings and wells are presented in Section 3.3 of the FSP. There is no well MW-19 proposed.

**RAB COMMENT 52.** Section 3.5, para 1 bullets 5 & 6: What is meaning of "matrix"? of "spike"?

**Response 52:** "Matrix" refers to the predominant material of which the sample to be analyzed is composed (i.e., soil). A "spike" or "matrix spike" is performed when a sample is fortified (spiked) with a known quantity of a specific compound and subjected to an analytical procedure. This test is conducted to indicate the appropriateness of the analytical method or procedure to the matrix of interest by measuring the amount of the spiked quantity that is recovered.

**RAB COMMENT 53.** Section 4.1: Why analyze samples on a quick turnaround time basis, for twice or more the price? Will five days make that much difference?

**Response 53:** Quick turnaround here refers to 7 days. Regular sample analysis results will be reported within 14 days.

**RAB COMMENT 54.** Section 4.2: One sample per soil type.

**Response 54:** Comment not completely understood. Please refer to response to comment 38.

**RAB COMMENT 55.** Section 4.3.1: Again why a quick turnaround?

**Response 55:** Please refer to response to comment 53.

**RAB COMMENT 56.** Why analyze twice for BOD, TOC, COD, heterotrophic plate count, hydrocarbon-oxidizing population, and iron-bacteria population? Again it appears that a remedial option is being evaluated before one is secluded (if bioremediation).

**Response 56:** It is important to understand the variability of these parameters across the site as well as the nature of these parameters in the influent water the for TS (if a pump and treat system is tested during the TS). The parameters listed are used to evaluate the potential for bioremediation and the potential for biofouling. Biofouling can result in reduced efficiency in wells (affecting both *in situ* remediation and groundwater pump and treat technologies), and treatment systems. Remediation technologies potentially affected by biofouling include air-stripping, UV treatment, vapor extraction, and bioremediation. Also, please refer to response to comment 44.

**RAB COMMENT 57.** Section 5.4.3: This is not a good protocol to use in taking water level measurements. The first step should be to use an oil-waster interface probe to determine depth to PSH (if any) and depth to water. If no PSH is detected, then use a bailer to see if a sheen is present.

**Response 57:** Comment acknowledged.

**RAB COMMENT 58.** Determining depth of the well should be done after water/product level measurements are made, because disturbing the liquid surface will affect the measurements, especially if a thin layer of PSH is present. Sending a bailer or a weighted steel tape down will disturb the well contents causing the readings to be inaccurate.

**Response 58:** Comment acknowledged.

**RAB COMMENT 59.** Section 4.3.2.2, para 1, line 3: "If the water does not meet the permit requirements for discharge, the water will either be treated on-site and discharged, or transported off-site to a treatment facility." This sort of "plan" is used repeatedly in the document. Have off site treatment facilities been alerted and engaged? Is there a plan for and an agency chosen to transport the hazardous waste to such a facility? There are concrete, exact descriptions of how hazardous products of all sorts are to be collected and stored on site, but the document goes vague about transport to remediation off-site.

**Response 59:** CLEAN II has subcontracts in place for the transport and disposal of investigation-derived waste. Decisions on the ultimate location of disposal or on ultimate

waste treatment will be made by the IDW subcontractor upon waste classification and in accordance with all applicable laws and regulations.

**RAB COMMENT 60.** Table C3-1: Define tolerance limit. Accuracy? Precision? Both?

**Response 60:** Tolerance limits are the limits within which field instrument measurements can be considered precise and/or accurate.

**RAB COMMENT 61.** Section 5.1.2: Point of information about the designation "Inert/Nonhazardous" here and throughout the document. Does this specifically exclude Designated waste? Since it is not planned to test or track the disposal of Inert/Nonhazardous waste, it is important to be clear that Designated Waste is not included, Designated Waste (see 3.2.2) is categorized as Nonhazardous in California law and yet has the potential for degrading water supply.

**Response 61:** Although "designated" wastes are defined as nonhazardous under California regulations, they are excluded from the definition of "inert/nonhazardous" waste (trash and construction materials) found in this work plan. As indicated in the workplan, all wastes, excluding trash and construction materials, will be handled as hazardous pending receipt of laboratory analysis. All wastes will be handled in accordance with applicable laws and regulations..