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July 25, 2003

Ms. Marcia Liao
Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, CA 94710

Dear Ms. Liao:

Subj: RCRA/CERCLA QUESTIONS POSED BY DTSC ON SITES 14, SITE 26, AND PARCEL
23 AT ALAMEDA POINT, ALAMEDA, CALIFORNIA

In a meeting with you and Mr. Daniel Murphy on June 24, 2003, you expressed some concerns regarding particular sites at Alameda as referenced above. We have attempted to respond to your concerns in enclosure (1). The Navy hopes that you find the enclosure helpful with decisions that will be made concerning the sites.

Please call me at (619) 532-0951, if you have any questions.

Sincerely,

GLENNAM. CLARK
Remedial Project Manager

Encl: (1) Site 14, Site 26, and Parcel 23 RCRA/CERCLA Research

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Site 14, Site 26, and Parcel 23 RCRA/CERCLA Issues Research

Questions resulting from a meeting between the DTSC and Navy representatives on Tuesday June 24, 2003 resulted in this response. The questions largely centered on the adequacy of sampling conducted in the vicinity of Installation Restoration (IR) Sites 14 and 26 and on the Environmental Baseline Survey (EBS) investigations of adjacent runway areas. Questions relative to Site 14 centered on sampling in and around the RCRA Gap 9 (EBS Parcel 17) and sources of chlorinated VOCs (Parcel 15). Concerns relative to the IR Site 26 (Western Hanger Zone, EBS Zone 6) and Parcel 23 (Runway Area-EBS Zone 4-Parcel 23) involved the thoroughness of investigation of features identified by the Environmental Baseline Survey. The discussion below outlines the concerns expressed, discusses available data, and provides responses to concerns relative to questions posed.

IR Site 14

Regulatory questions relative to IR Site 14 (EBS Parcels 15 and 17) related to evaluating possible source mechanisms (e.g. VOCs retained in vadose zone soil) potentially still present at the site. The low number of soil samples on Parcel 15 raised concerns about the presence of residual sources of VOCs in soils. Uncertainty with respect to the location of GAP 9 generated questions relative to the adequacy of soil sampling to determine whether GAP 9 is a current or past source of groundwater VOCs. Concerns relative to the sampling fall into three interrelated categories:

- Adequacy of sample locations and frequency
- Adequacy of sample depths, and
- Adequacy of analytical suites.

The concerns about the adequacy of characterization and a clarification of the GAP 9 location are provided below.

The relative percentage of soil VOC analyses in contrast to the total number of samples collected on the parcel was a concern. The existing analytical data set, when viewed in the context of historical information and in conjunction with substantial groundwater sampling represents an adequate sampling program to answer source mechanism questions. The majority of early soil sampling targeted constituents related to known previous use. Metals, SVOCs, TPH, dioxins and pesticides/PCBs were the primary target of the early EBS soil sampling. Once VOCs were observed in Site 14 groundwater, investigations were conducted to further characterize the nature and extent of VOCs. The shallow water table, generally less than five feet below ground surface, has only a thin soil and vadose zone to retain volatile constituents. The most effective approach to evaluating any soil contribution is to examine impacts to and characterization of site groundwater.

Parcel 15

IR Site 14 groundwater sampling indicates that concentrations of chlorinated solvents (TCE, 1,2-DCE 1,2-DCA and Vinyl Chloride) are present at shallow depths at a number of locations. Concerns have been expressed about the potential for continuing VOC source mechanisms. The small number of soil VOC analyses raises questions about the adequacy of characterization with respect to sampling locations, frequency and analytical suites. An extensive groundwater data set coupled with a shallow depth to groundwater diminishes the importance of soil sampling for source determination. The following discussion illustrates that the original source area for groundwater VOCs has probably been identified and that the existence of active sources is unlikely. The existing data set is sufficient to evaluate and implement required remedial alternatives and additional soil sampling is unnecessary.

Only, two soil samples (circa 1994) were collected on the parcel to characterize and evaluate chlorinated solvents in the soil. One location, near well M101-C had significantly higher concentrations of VOCs in groundwater than surrounding areas. This location was most probably the original source location for groundwater VOCs. Soil samples collected during the installation of wells M101-A and M113-A (TtEMI, 2003) yielded similar concentrations of 1,2 DCE. Post-installation groundwater samples collected from the wells indicate much higher concentrations (380 verses 6 ug/l) in well M101-A than in M113-A. The similar soil VOC concentrations in wells M101-C and M113-A, with dissimilar groundwater concentrations between the wells M101-A and M113-A, suggests that VOCs in soil resulted from migration and smearing of dissolved phase chlorinated constituents in groundwater.

The soil sampling appears minimal until the availability of groundwater (hydropunch and well) is considered. Groundwater data reported in the Final Remedial Investigation for Site 14 (TtEMI, 2003) provides a sound basis for determination of the most likely source area and whether active sources exist. Groundwater wells and a grid of hydropunch samples (CIRCA 1998) on roughly 100 foot centers provided a good groundwater data set from which to infer a potential source area.

Site 14 Final Remedial Investigation Report (TtEMI, 2003) depicts areas exceeding PRG concentrations for VOCs. The highest concentrations of chlorinated solvents (in groundwater) have been detected in the southern section of Parcel 15 near well M101-A. The high concentration of VOCs in well M101-A points to the area around well M101-A as the most likely source area for groundwater VOCs. Available groundwater data is adequate to characterize the most likely source, near well M101-A.

The character of the chemicals observed in groundwater, low concentrations of parent chemicals such as TCE and the relatively larger concentrations of degradation end-product (vinyl chloride) suggests a degraded dissolved phase constituent without a currently active source. The chlorinated solvent TCE, which represents the routinely used industrial solvent, is present at the site but at low concentrations with erratic distribution. The degradation product 1,2-DCE is found over a wider area. Vinyl chloride, an end product of anaerobic degradation, has the widest distribution of all VOCs at the site.

Parcel 15 contains most of the elevated concentrations of VOCs found at Site 14. The large proportion of vinyl chloride indicates that significant degradation of the original chlorinated solvents has occurred. The presence of vinyl chloride over an area encompassing the smaller 1,2-DCA and 1,2 DCE concentrations suggests a common source area.

The relative percentages of chlorinated solvents (TCE verse vinyl chloride) suggests that the observed groundwater constituents are largely degraded and the lack of elevated parent compounds makes the presence of an ongoing release mechanism unlikely. Current knowledge of Site 14 VOC distribution provides sufficient information to evaluate and implement remedial alternatives and additional soil sampling for source determination is unnecessary.

Parcel 17A

The RCRA generator accumulation point (GAP) 9, located on IR Site 14 (Parcel 17), was cited as a potential source area for groundwater VOCs at Site 14. Concerns were raised about the Navy's "uncertainty" with respect to the location of GAP 9 on Parcel 17. This raised concerns about the appropriate location of samples addressing the GAP. The low number of soil samples analyzed for VOCs near the GAP location has prompted concerns about the location, frequency and analytical suites used in characterization. In response to concerns about the location of RCRA GAP 9, a review of the regulatory history of the GAP and a discussion of the data collected near the site by the EBS and IR Programs is presented below. The Gap is not considered an active source of VOC's in groundwater.

GAP site 9 is correctly identified in the Final Remedial Investigation Report (TtEMI June 6, 2003) as being located in the southwest corner of Parcel 17, although it is one of two sub-sites identified in early RCRA documentation as GAP 9. Site regulatory documents indicate that GAP 9 originally included a second component located to the north, adjacent to Building 528. The location identified in the Final Remedial Investigation Report, in the RCRA Facility Assessment (RFA-DTSC, 1991) and described in the RCRA Part B Permit (DTSC July 24, 1993) is the southern most of these locations. The second location was not carried forward as an identified GAP site in later documentation.

The removal of the northern most location from the list of GAPs is not explained in available documentation but the time frame for the removal is traceable. In response to the DTSC's "Request to complete a RCRA Facility Assessment Questionnaire" (Bernie Edrada -DTSC, February 11, 1991) the Navy submitted a completed questionnaire (Randy Cate to Bernie Edrada, 5090 Ser 52/136, 15 May 1991) which included both the northern and the southern sites in GAP 9. The sites were identified as separate locations with the northern and southern sites used as accumulation points for "Waste Hydrocarbons" and "Batteries and Spent Lead Acid Electrolyte", respectively. The "RCRA Facility Assessment" (DTSC, April 1992) included only the southern most site but listed both batteries and waste hydrocarbons as contents.

The Draft, Basewide Environmental Baseline Survey/ Community Environmental Response Facilitation Act Report for NAS/NADEP Alameda identified and targeted only

the northern most accumulation point and targeted it for EBS Phase 2A sampling. EBS Phase 2 sampling targeted compounds associated with identified previous use (metals, TPH and SVOCs) and limited VOC sampling was conducted. The IR program targeted the southern site using surface soil sampling although the concerns are expressed about the value of VOC sampling in surface soils. The coverage of GAP 9 between the EBS and the IR program provides some coverage of both GAP 9 locations.

IR program hydropunch sampling conducted in 1998 (TtEMI) provided the most definitive evidence that the GAP 9 locations are not active sources of VOCs. Hydropunch samples, the S-14 series, were collected on a grid across Site 14 on roughly 100-foot centers at depths slightly below the water table (9-15 feet bgs). The eastern edge of this hydropunch grid includes the GAP 9 locations (TtEMI 2003). These hydropunch points were analyzed for VOCs and six of the points have a direct bearing on GAP 9. These hydropunch samples contained levels of chlorinated solvents but the low concentrations reflect locations at a cross or trailing edge of a plume rather than at or near a source. The conclusion is that the GAP 9 soils are not current source areas for VOCs. The available data provide sufficient assurance that GAP 9 is not an active source of groundwater VOCs and additional soil sampling is not necessary.

Building 26

Additional inspection of Building 26 was recommended since the original EBS was denied access due to security issues. Building 26 was constructed in 1941 and served as storage for small arms and pyrotechnics. This one-story building covers approximately 2,650 square feet and was constructed of concrete with a painted concrete floor and metal construction roof. Activities conducted within this building included cleaning small arms machinery using oil and solvents and storing live ammunition and firearms. The RCRA Site GAP 11, Hazardous Materials Storage Area covered approximately 400 square feet.

Soil beneath the pavement at a flammable liquid storage locker, located west of Building 26, required evaluation to determine whether the area had been impacted by releases of VOCs or metals from containers stored in the shed. One subsurface soil and one surface soil sample were collected. The subsurface sample was analyzed for CLP VOCs, and the surface sample was analyzed for metals. VOCs were not detected in subsurface soil. Based on the analytical results, additional investigation was not recommended. No further inspections appeared necessary since no apparent problems were associated with the building.

Installation Restoration Site 26

Historical photos depict concrete aircraft parking areas in the western part of Site 26 (EBS Zone 6) that have since been paved with asphalt. Concerns relative to these stains were addressed in the Phase 2 EBS (IT 2001). Zone 6 Target Area 1 (Open Space Aircraft Maintenance and Fueling Areas) includes the open space of parcels 30, 31, 32, 33, 34, 35, 190, 191, and 192. The aerial extent of this target area was defined by widespread staining observed in historical aerial photographs resulting from aircraft fueling and maintenance activities. The largest and heaviest stains are located at aircraft parking locations and the borders of hangar buildings. Sample locations correspond to

the areas observed to be significantly stained based on historical aerial photograph review or site inspection information.

Sixty-six zone-wide samples were collected from Zone 6. Soil samples were collected from depths averaging three feet below ground surface. Samples collected in this target area assessed potential releases of VOCs to subsurface soil via cracks in the concrete. Zone-wide samples were analyzed for one or more of the following test panels: VOCs, SVOCs, TPH (extractable and purgeable), and metals. The results of this sampling identified concerns that are now identified for action at IR Site 26. The current IR site concerns are not related to the observed staining. No further concerns were identified with the staining observed on the former runway surface.

Parcel 23

A number of concerns were expressed about the adequacy of sampling at various location on EBS Parcel 23 (Zone 23). A former Exchange Gas station was located in the northwestern area of Parcel 23 (Building 71) and concerns were expressed about the depth intervals sampled. Activities conducted within Parcel 23 included open space aircraft wash-down, fire fighting training activities, aircraft warm-up, and use of the aircraft runway. Most of these concerns have been addressed in the EBS sampling and the evaluation of the data suggested that no further investigation was warranted.

Buildings 71 and 332

Building 71 was a 2,400 square foot semi-permanent building constructed in 1950. Building 71 was located directly north of Building 4, in the northeastern part of Zone 23 (the eastern tip of Runway 25), and served as a gasoline filling station until 1962, when it was demolished. EBS information indicates that activities conducted in and around this building included gasoline refueling. Building 71 was demolished in 1962. Historical records indicate that at least four USTs existed near former Buildings 71 and 332. No further information on these USTs is available. No evidence of other USTs in Parcel 23 has been found but subsurface soil samples were collected in the former gas station location to determine whether residual impacts remained at the site.

Two surface soil samples were collected from Target Area 2 at depths of approximately one to two feet bgs. Two subsurface soil samples were also collected from this target area at depths of approximately 3.5 to 5.0 feet bgs. Both surface and subsurface samples were analyzed for TPH and metals. Subsurface soil samples were also analyzed for VOCs. The soil sampling is considered representative of the site if extensive TPH was present or indicated. No such evidence was found and no further sampling was conducted.

Fire Fighting Training

Site inspection records and photo logs reveal that flammable fuels were stored and used in Open Space III for fire fighting training. Approximately 60 gallons of flammable fuels were reportedly stored in a CONEX box 150 feet east of Structure 480 at the time of the EBS inspection. Fire fighting training activities involved the use of fire fighting foam on aircraft in various areas. The EBS Phase 1 site inspection data documented that the

application of fire fighting foam left a white residue on the ground surface in scattered areas in the open space of Parcel 23.

The chemical composition of the fire fighting foam and the types of training activities conducted were not known. The exact location of the fire training activities are not currently known, no specific environmental concerns were identified, and as a result, no sampling was conducted for the foam fire suppression activity. Likewise, no specific concerns were identified with flammable storage areas located in the runway area. The ASTs have been removed from the runway area and specific concerns such as tanks located near the runway aircraft arrestors were sampled during the Phase 2A EBS sampling.

Aircraft Parking Area Spills

Aerial photographs and site inspection data revealed undocumented scattered spills in the aircraft parking areas. The aircraft parking area spills appear to consist of small amounts of leaked fuel. This staining is relatively minor and was not sampled. Results from Zone 6 sampling of stained concrete areas were applied (by analogy) to areas west of Site 23 and since no problems were apparent, no further sampling was conducted. In areas in eastern Parcel 23, stains associated with helicopter parking areas were examined. Analytical results revealed elevated TPH in one of the stained helicopter parking pads. Four surface soil samples, ten subsurface soil samples, and ten groundwater samples were collected during EBS Phase 2B at ten locations throughout the helicopter parking pads. The surface soil, subsurface soil and groundwater samples were analyzed for TPH, VOCs, and SVOCs and the analytical results were summarized in the EBS Phase 2 Report (IT 2001). No further actions have been warranted at these locations based on this data.

Buildings 50, 51, 56, 57, and 58

Buildings 50, 51, 56, 57, and 58 are one story, 1,400 to 1,600 square foot concrete buildings with dirt-covered roofs. These buildings were constructed in 1941. EBS information indicates that the activities conducted within these buildings were limited to high explosive munitions storage. Documents show that munitions have been stored in Building 50, 51, 56, 57, and 58 from 1941 to the time of base closure. Documented spills have not occurred at these buildings, and staining was not apparent in aerial photographs. Munitions storage areas located within Buildings 50, 51, 56, 57, and 58, were addressed in the EBS Phase 2A. Two subsurface soil samples and eight groundwater samples were collected from these areas and were reported in the EBS Phase 2 Report (IT 2001). The six groundwater samples collected near the munitions storage areas were analyzed for explosives. No significant concerns were generated from this sampling.

Building 100

Building 100 is a one-story, 600 square foot building which served as a transformer vault. Building 100 is located next to Building 490 in the southern end of Parking Apron No. 2. EBS information indicates that this building was always used as a transformer vault. Transformers and oil-filled switches stored in Building 100 were suspected to contain PCBs. PCBs were not detected in the switches; the transformers were not accessible, and

were therefore not sampled. All equipment was removed from Building 100, no releases were identified at the building and as a result, no EBS or RI sampling was conducted. No further sampling is currently planned or appears necessary.

The wash-down process involved the rinsing of residuals (e.g., fuel and dirt) from aircraft exteriors. Wash-down was conducted in the southeastern area of the open space, north of the east/west taxiway and west of Structure 489. A review of aerial photographs indicates that aircraft wash-down has occurred at the wash pad since about 1983. Aircraft wash down activities were conducted on parcel 23 at an aircraft wash pad located in the southern section of Parcel 23. The subsurface soil and groundwater samples collected from the vicinity of Structure 259 were analyzed for TPH, VOCs, and SVOCs. TPH was detected but levels were within TPH criteria. No additional investigation was warranted by the results of the sampling.

Conclusion

Concerns expressed about the adequacy of investigations related to the sites are adequately addressed by previous investigations. The location, frequency, depths and analytical suites provide a substantial data set from which to evaluate the concerns expressed by the DTSC in the June meeting.