DRAFT PHASE V MONITORING REPORT AND REMEDY OPERATION STATUS STATEMENT FORMER RCA FACILITY 1 NETWORK DRIVE (FORMERLY 183 BEDFORD STREET) BURLINGTON, MASSACHUSETTS

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EXECUTIVE SUMMARY

On behalf of Lockheed Martin Corporation (LMC), Shaw Environmental, Inc. (Shaw, formerly IT Corporation) has completed surface water and groundwater monitoring activities for the period covering December 1, 2002 through January 31, 2003 at the former RCA Facility site located in Burlington, Massachusetts. The objectives of this report are to: a) document the results of the Phase V monitoring program as presented in the 1998 Remedy Implementation Plan (RIP) and as stipulated in the Massachusetts Contingency Plan (MCP); b) demonstrate that monitored natural attenuation (MNA) qualifies as a permanent solution for the well-define chlorinated VOC plume and is therefore eligible for Remedy Operation Status (ROS); and c) modify the Phase V monitoring plan to accommodate ROS and the recent completion of comprehensive response actions in the Central Brook and associated wetlands area.

Phase V Monitoring Results

The scope of the monitoring program for this reporting period included: 1) November 2002 and January 2003 sampling and reporting of volatile organic compound (VOC) results in groundwater, and 3) November 2002 reporting of VOC results in surface water. Based on the results of the monitoring program, the following conclusions have been drawn:

- Based on recent surface water sampling results, four VOCs were detected in surface water: cis-1,2-dichloroethene (1,2-DCE), toluene, tetrachloroethylene (PCE), and methyl tert-butyl ether (MTBE). 1,2-DCE, toluene, and MTBE are attributable to an upstream source since they have not been detected in the well-defined chlorinated VOC plume associated with the site. PCE was detected at concentrations below reporting limits and below its respective trigger level (trigger levels were established in the 1998 Phase IV RIP);

- Based on recent groundwater sampling results, natural attenuation continues to occur at the site. Graphical depictions of the groundwater plume area and cross sections over time continue to demonstrate that natural attenuation is occurring for VOCs in groundwater at the site.

Remedy Operation Status

Based on the monitored natural attenuation (MNA) evaluation report (IT Corporation, 2001), and as supported by additional rounds of groundwater monitoring data, MNA

qualifies as a remedial action alternative capable of achieving a permanent solution. MNA had previously only been considered a temporary solution. Since the source of the well-defined chlorinated-VOC plume has been removed, and no substantial hazard exists at the site, the site is eligible for ROS.

Modifications to the Phase V Monitoring Program

Due to the transitioning of the site to ROS, and the recent completion of comprehensive response action activities in Central Brook, the Phase V monitoring program is being modified in accordance with 310 CMR 40.0892 (2). Modifications include: a) elimination of sediment and surface water samples to be collected and analyzed for metals since this source has been eliminated and a condition of no significant risk has been achieved; b) plans to calculate cleanup times once every five years to confirm that MNA is meeting expectations, and c) development of a plan to verify attainment of remedial objectives.

1 INTRODUCTION

This Phase V Monitoring Report and Remedy Operation Status (ROS) Statement has been prepared by Shaw Environmental, Inc. (Shaw, formerly IT Corporation) for Lockheed Martin Corporation (LMC), the former owner of the property located at 1 Network Drive (formerly 183 Bedford Street) in Burlington, Massachusetts (the site). This report provides a status update on groundwater and surface water monitoring activities for volatile organic compounds (VOCs) that have been conducted in accordance with the Remedy Implementation Plan (RIP) (EMCON, 1998) since the last Phase V Monitoring report in December 2002. This is the ninth monitoring report that has been prepared for the site. This report also provides a statement that the remedial action alternative (monitored natural attenuation) qualifies as a permanent solution, and that the site is therefore eligible for ROS in accordance with 310 CMR 40.0893. Finally, this report presents significant modifications of the Phase V monitoring program in accordance with 310 CRM 40.0892 (2) as a result of the ROS transition and the recent completion of comprehensive response action activities in Central Brook.

A copy of the Comprehensive Response Action Transmittal Form (BWSC-108) is included in Appendix D.

1.1 Objectives

There are three objectives to this report. The first objective of this Phase V monitoring report is to document monitoring activities that are being conducted at the site in accordance with the various plans described in the 1998 RIP and the 2001 Phase V Addendum. In addition, this monitoring report will document an evaluation of the monitoring data with respect to identifying conditions which might pose a Substantial Hazard, and if appropriate, identify the need for contingency actions (if warranted). Given that the selected remedial alternative does not include a remedial system, this monitoring report does not include any items pertaining to operation or inspection.

The second objective is to apply for remedy operation status in accordance with 310 CMR 40.0893. Monitored natural attenuation (MNA) was selected in 1997 as a temporary solution to address a well-defined chlorinated VOC plume at the site. Additional data has been collected since that time to show that MNA qualifies as a permanent solution. Since MNA will result in a permanent solution, on-going Phase V monitoring activities should continue under ROS until cleanup goals are met.

The third objective of this report is to present necessary modifications to the Phase V monitoring plan in light of the transition to ROS and the recent completion of comprehensive response action activities in Central Brook. These modifications include the elimination of sediment and surface water sampling for metals analyses from the Phase V monitoring program, plans to recalculate cleanup times every five years, contingency plans, and plans for verifying that cleanup goals have been met.

1.2 Background

The property located at 1 Network Drive is approximately 158 acres in size, with approximately 140 acres in the Town of Burlington and the remainder in the Town of Bedford (see Figure 1-1). It is bounded to the north by Vine Brook, to the east by Middlesex Turnpike and to the west by U.S. Route 3. The property is a former industrial facility that included two large buildings (which were demolished in 1996) and several smaller buildings (which were demolished in 1996 and 1997) where industrial activities (primarily manufacturing and testing of military electronics equipment) occurred between 1958 and 1994. Undeveloped wooded land and wetlands surround these areas. In addition, three brooks are located on the property: Vine Brook which flows along the northeastern portion of the property from southeast to northwest, a tributary to Vine Brook in the central portion of the property (Central Brook), and a tributary to Vine Brook in the western portion of the property (West Brook). The property is partially located within the Zone II of a water supply well in the Town of Bedford.

All of the buildings at the site (excluding the Baxter House which was a former farmhouse) were removed from the property by LMC in 1996 and 1997. Sun Microsystems, Inc. purchased the property in August 1997. Sun is currently redeveloping the property as a corporate office complex for their east coast regional headquarters. Figure 1-2 shows the new office buildings as well as the new four lane Network Drive which replaces the previous Kent Road.

A Phase I Site Investigation Report was prepared by Geraghty & Miller, Inc. in August 1995. The Massachusetts Department of Environmental Protection (DEP) approved a Tier IB permit for the site on December 11, 1995 (release tracking number 3-0265, and permit number 102258).

A Phase II Comprehensive Site Assessment (CSA) was conducted by EMCON between October 1996 and June 1997, which indicated impacts to soil, groundwater, surface water and sediment in various areas across the site. The risk characterization for human health indicated that a condition of No Significant Risk for the foreseeable future did not exist for: 1) soils in limited areas of the Hazardous Waste Storage Area and in the basement of the Baxter House, and 2) groundwater impacted by chlorinated VOCs originating from the former TCE tanks/Building 2 area and extending downgradient to Vine Brook in both

the deep overburden and bedrock aquifers, and a localized area in the vicinity of one well at Site 7. In addition, the risk characterization for the environment indicated that a condition of No Significant Risk does not exist for sediment in Central Brook and associated wetlands. Impacted soil in the Hazardous Waste Storage Area and impacted sediment in the portion of Central Brook located south of Kent Road were removed as part of a Release Abatement Measure (RAM) conducted in the Summer of 1997. The site was designated as a Public Involvement Plan (PIP) site in 1998. Impacted soil and groundwater in the vicinity of the Baxter House were remediated as part of a RAM completed in October 2000.

Alternatives for addressing the areas of impacted groundwater and sediment at the site were identified and evaluated in the Phase III Remedial Action Plan (RAP) which was prepared by EMCON in December 1997. For sediment, the Comprehensive Remedial Action alternative that was selected was the No Action Alternative, as a Temporary Solution. No substantial hazards currently exist at the site; however, future migration of impacted sediment to Vine Brook could result in a Substantial Hazard to the environment. Therefore, the remedial goal of a Temporary Solution for sediment was to assure that impacted sediment did not migrate and accumulate to significant levels at new locations. Additional comprehensive response actions have been conducted in Central Brook during the Fall of 2002, as discussed below.

For groundwater, the Natural Attenuation Alternative was selected as a Temporary Solution. A Substantial Hazard to human health did not exist at this site in 1997 based on the commercial use of the property at that time. The remedial goal of a Temporary Solution for groundwater is to assure that a Substantial Hazard does not occur in the future.

Key elements of the 1998 Phase IV Remedy Implementation Plan (RIP) were the preparation of monitoring plans to assure that a Substantial Hazard does not exist in the future, contingency plans that would be implemented should conditions be identified that could pose a Substantial Hazard, a predator study plan to gather information to provide direct evidence of whether impacted sediment poses a Significant Risk to the environment, and a plan to redesignate the aquifer so that the GW-1 category will no longer be applicable. Based on Phase V monitoring data, a condition of Substantial Hazard has not and does not exist. The conclusions of the predator study were that while various life stages of amphibians were observed, in general the study area was not a good habitat for the predators of interest (amphibians and aquatic birds) due to its physical characteristics. The survey indicated that the area is unlikely to represent an important breeding or feeding habitat for aquatic birds, since they prefer areas with dense wetland vegetation, which were not found at this site.

Trigger levels for metals in surface water and sediment and VOCs in surface water were established in the Phase IV RIP. The basis for these trigger levels were ambient water

quality criteria for metals, drinking water standards for VOCs, and Effects Range Low[1] (ERL) sediment benchmarks for sediment. As documented in the previous June 2001 Phase V Monitoring Report, a review of trigger levels was warranted for metals in surface water and sediment. Trigger levels for metals in surface water were adjusted as indicated in the June 2001 Phase V Monitoring Report. Trigger levels for metals in sediments were adjusted as discussed below.

A large volume of metals-impacted sediment data exists which indicated significant data variability related to sampling inefficiencies and sample heterogeneities. This data variability led to numerous false positive triggers. This heterogeneity resulted in detections of metals above trigger levels when the overall average metal concentration and trends did not indicate that significant sediment migration has or was occurring.

The Phase V Addendum, submitted in August 2001 presented a modification to the sediment sampling program and provided a rationale for this modification. The change in sampling protocol and analysis was intended to decrease the number of false-positive trigger exceedances, and to better detect the potential migration of metals from Central Brook to Vine Brook.

A partial-RAO was filed on January 22, 2002 for the site. The only areas/media not included in the partial RAO were: 1) a well-defined chlorinated volatile organic compound (VOC) groundwater plume, and 2) surface water and sediments in the Central Brook and associated wetlands area.

A Phase III RAP and a Phase IV RIP Addenda were prepared in July 2002. The Phase III RAP identified and evaluated two remedial action alternatives (RAAs) in addition to the five previously screened technologies in the 1997 Phase III RAP. These additional RAAs (S-6 and S-7) addressed the sediment in Central Brook and/or associated wetlands based on findings from the Phase III Investigation and Treatability Study. The detailed evaluation and comparison of sediment alternatives resulted in the selection of the Focused Excavation Alternative (S-6) via vacuum excavation as the Permanent Solution for the sediment in Central Brook and/or associated wetlands.

A Phase IV RIP Addendum prepared in July 2002 presented detailed plans relating to the implementation of sediment removal by vacuum dredging and off site disposal The Phase IV RIP Addendum focused solely on addressing impacted sediments and outlined the implementation of the remedial alternative selected in the Phase III RAP Addendum.

Phase IV comprehensive response actions associated with remediating sediments in Central Brook were successfully completed between September and December 2002.

[1] Effects Range Low (ERL) sediment benchmarks from Long, et al. (1995) based on marine/estuarine spiked sediment toxicity studies. The ERL values represent 10th percentile concentrations at which effects were observed.

Since remediation is complete, Phase V monitoring activities associated with monitoring metal concentrations in Central Brook and Vine Brook sediments and surface water are no longer needed. A significant amount of source material has been removed and a condition of No Significant Risk has been achieved, as documented in a partial RAO for Central Brook and associated wetlands submitted concurrently with this document. A Phase IV Completion Statement and partial RAO have been prepared and are being submitted concurrently with this Phase V Monitoring report and ROS Submittal.

1.3 Report Organization

Shaw has organized this Phase V Monitoring report and ROS Submittal as specified below:

- Section 2.0: Provides a description of site conditions;
- Section 3.0: Provides a discussion on why MNA is considered a permanent solution. This section summarizes the 2001 MNA Evaluation report and also presents the most recent rounds of groundwater and surface water data;
- Section 4.0: In accordance with 310 CMR 40.0893 (2) (d), this section demonstrates that a substantial hazard does not exist at the site (a requirement for ROS);
- Section 5.0: In accordance with 310 CMR 40.0892(2), this section provides a description of significant modifications being made to the monitoring program;
- Section 6.0: Presents conclusions and the basis for the ROS Opinion;
- Section 7.0: Describes Public Involvement Activities performed as part of this submittal;
- Section 8.0: Provides a list of references; and
- Section 9.0: Provides a list of acronyms.

2 SITE CONDITIONS

The property located at 1 Network Drive is located in a commercial area of the Town of Burlington and is surrounded by undeveloped wooded land and wetlands. Surface water features include three brooks and various ponds located on the property, as shown on Figure 1-2. The site is partially located within the Zone II of a water supply well in the Town of Bedford. All of the buildings at the site (excluding the Baxter House which was a former farmhouse) were removed from the property by LMC in 1996 and 1997.

Sun is currently redeveloping the property as a corporate office complex for their east coast regional headquarters. Figure 1-2 shows the new office buildings as well as the new four lane Network Drive which replaces the previous Kent Road. The location of the well-defined chlorinated VOC groundwater plume is shown in Figure 1-2. This well-defined chlorinated VOC plume contains three VOCs above clean-up standards: tetrachlorethylene (PCE), trichloroethylene (TCE), and 1,1-dichloroethylene (1,1-DCE). Based on results from the latest round of sampling in November 2002, PCE, TCE, and 1,1-DCE concentrations within the plume are less than 6, 26, and 49 ug/L respectively.

The depth to groundwater in the vicinity of the plume averages approximately 10 feet below grade. The subject plume is located approximately 15 feet below the water table and discharges to Vine Brook.

3 MNA AS A PERMANENT SOLUTION

In 1997, monitored natural attenuation (MNA) was selected as the comprehensive response action alternative at the site to address the well-defined chlorinated VOC plume (Phase III RAP, EMCON, 1997). At the time, this response action alternative was considered a temporary solution, primarily due to the length of time it would take to clean up the site: 270 years. In the Phase IV RIP (EMCON 1998), plans were established to proceed with MNA as a temporary solution. The Phase IV RIP also included plans to re-designate the aquifer, which would shorten the natural attenuation clean-up time; these plans were never implemented. Subsequently, additional investigations were performed to further evaluate MNA for a future periodic evaluation. The periodic evaluation would result in one of three outcomes: a) MNA qualifies as a permanent solution, b) additional data are needed to render an opinion, or c) MNA does not qualify as a permanent solution, another more feasible solution exists, and it will be implemented.

In 2001, a MNA Evaluation report was prepared which: 1) provided evidence that natural attenuation is occurring at the site, 2) calculated cleanup times of 15 to 35 years, and 3) demonstrated that enhanced bioremediation (remedial alternative G-2 in the Phase III RAP, EMCON, 1997) was not feasible. Given that the cleanup time of the other response action alternatives considered in the Phase III RAP was similarly 20 – 30 years, MNA should be considered a feasible response action alternative which is capable of reaching a permanent solution in a reasonable time-frame. Two additional rounds of groundwater data further support this claim.

The rest of this section summarizes the results and conclusions of the 2001 MNA Evaluation report and additional groundwater and surface water data collected since the MNA Evaluation report which further confirm that natural attenuation is continuing

3.1 MNA Evaluation (2001)

In the June 1999 Phase V Monitoring Report, EMCON performed a natural attenuation evaluation to assess natural attenuation rates. Based on the 1999 natural attenuation evaluation, it was estimated that it would take between five and 50 years to reach clean-up goals. In August 1999, Sun requested that the natural attenuation rates be re-evaluated after a groundwater monitoring and microcosm testing program.

The MNA report prepared by IT Corporation (currently Shaw) in May 2001 incorporated a groundwater monitoring and microcosm testing program to provide an estimate of the

rate of natural attenuation of the chlorinated volatile organic compounds (cVOCs) in groundwater at the site, and to evaluate potential enhancements to natural attenuation.

Based on the results of the groundwater monitoring and microcosm testing program, the following conclusions were drawn:

- Based on primary, secondary, and tertiary lines of evidence, natural attenuation is occurring at the site. These lines of evidence include: a) shrinking plume, b) presence of breakdown products, and c) geo-chemical indicators;

- Applicable cleanup standards have been achieved at five of the 14 wells: EMW-10R, 3H-1S, 3H-1D, EMW-7, and MW7-7;

- Three cVOCs (tetrachlorethylene, trichloroethelyne, and 1,1-dichloroethene) were above the applicable cleanup standards in nine wells (3G-11, 3G-12, EMW-10D, EMW-11D, EMW-11R, EMW-1D, EMW-2D, MWA-1D, and EMW-3R). Based on nine rounds of groundwater monitoring data from May 1998 through February 2001, cleanup time for these three cVOCs was estimated to take 2 - 5 years for four of these wells (EMW-10D, EMW-11D, EMW-1D, and MWA-1D) and 15 – 35 years for three wells EMW-2D, EMW11R, and EMW-3R;

- Cleanup times could not be calculated for two downgradient wells, 3G-11 and 3G-12 since concentrations have increased slightly between 1998 and 2001. Although there was a slight increasing trend in these wells, it was expected that ultimately these cVOCs would decay at the same rate as the others; and

- Based on the Microcosm Study, enhancement via carbon addition may accelerate the degradation of trichloroethene by 20%; however, it is not known if carbon enhancement will accelerate the degradation of tetrachlorethene and 1,1-dichloroethene. The microcosm study was performed in a controlled laboratory setting with TCE concentrations approximately 40 times higher than at the site. It was IT's experience that when carbon enhancement is applied to low cVOC concentrations similar to the concentrations found at the site, carbon enhancement has little effect on increasing the natural attenuation rates.

- The estimates of first-order biological rates specific to the site indicate that a significant portion of natural attenuation, up to 40%, may be the result of biodegradation. The degradation mechanisms for cVOC reduction which show the greatest evidence are anaerobic reductive dechlorination (PCE, TCE, 1,1-DCE and 1,1,1-DCE), aerobic cometabolism (TCE, 1,1-DCE), abiotic dehydrohalogenation (1,1,1-TCA) and possibly direct biological oxidation (1,1-DCE).

Given the revised clean up times developed in the 2001 MNA report, the implementation of MNA appears to be a viable alternative in achieving a Permanent Solution for the cVOC plume in groundwater at the site. The selected RAA (MNA) was originally screened, retained, and selected as an appropriate Temporary Solution in the 1997 RAP. However, based on recent monitoring data and revised clean up calculations, MNA can now be considered as an appropriate Permanent Solution for the cVOC plume at the site.

3.2 Recent Additional Data

Annual surface water and groundwater data that was collected in November 2001 was summarized in the June 2002 Phase V Monitoring report. Based on the November 2001 surface water sampling results, five VOCs were detected in surface water: 1,1-DCE, benzene, m-dichlorobenzene, p-dichlorobenzene, and methyl tert-butyl ether (MTBE). 1,1-DCE was partially or wholly attributable to an upstream source since it was detected in the upstream location. The remaining VOCs were attributable to an upstream or upgradient source since they were detected in the upstream sampling location and/or they have not been detected in the well-defined chlorinated VOC plume associated with the site. Furthermore, 1,1-DCE was below the applicable trigger level established in the 1998 Phase IV RIP.

Based on the November 2001 groundwater sampling results, natural attenuation continued to occur at the site. The only compounds detected with concentrations above the GW-1 standards were 1,1-DCE, PCE, and TCE. Graphical depictions of the groundwater plume areas and cross sections for each of these constituents were presented in the June 2002 Phase V Monitoring report. By comparing the nature and extent of the plumes over time, it was demonstrated that natural attenuation was occurring for VOCs in groundwater at the site.

Since the last Phase V monitoring report submitted in December 2002, additional Phase V surface water and groundwater quality data have been received. These data include 14 groundwater and five surface water samples collected November 20 and 21, 2002. In addition, a groundwater sample (and duplicate) were collected from well EMW-1D on January 23, 2003 in order to evaluate anomalous data obtained from this well in November 2002. For QA/QC purposes, MS/MSD and duplicate samples were collected at a frequency of 1:20. Samples were analyzed for VOCs via EPA Methods 8021B and 8260B by Columbia Analytical (Jacksonville, FL). Analytical data are included in Appendix A. The following sections discuss the laboratory QA/QC results, surface water results, and groundwater results.

3.2.1 QA/QC Evaluation

The laboratory analytical data sheets for the surface water and groundwater samples collected by Shaw during the November 2002 and January 2003 sampling events are provided in Appendix A.

The analytical results for Phase V sampling activities were electronically entered into the GIS/Key database and tabulated/validated by Shaw. Validation included a review of all laboratory and field quality control samples including a check of: sample log in and custody; preservation; analytical holding times; surrogate recoveries; detected results for method/trip blank samples; calculated relative percent differences (comparing field and laboratory primary and duplicate samples); matrix spike recoveries and calculated relative percent differences on matrix spike recovery duplicates; laboratory control standard recoveries; and miscellaneous observations. In addition, detection limits were reviewed for appropriateness for this project and analytical data were compared to historic data for consistency. Based on the validation of the Phase V sampling data, the data required no qualification and are considered usable for this sampling program with the exceptions listed below. The following sample results were qualified for various laboratory-related quality control issues, but are still considered usable:

- The VOC results and detection limits from the groundwater sample collected from EMW-2D on November 20, 2002 are reported as “estimated” (flagged with a J) because the 14-day holding time was exceeded by approximately 1 day;
- The 1,1-dichloroethylene results from the primary and duplicate groundwater samples collected from 3G-12 on November 20, 2002 are reported as “estimated” (flagged with a J) because the 14-day holding time for the diluted re-analyses was exceeded by approximately 1 day;
- The trichloroethylene result from the groundwater sample collected from EMW-1D on November 20, 2002 are reported as “estimated” (flagged with a J) because the 14-day holding time for the diluted re-analyses was exceeded by approximately 1 day;
- The 1,1-dichloroethylene results from the primary and duplicate groundwater samples collected from EMW-1D on January 23, 2003 are reported as “estimated” (flagged with a J) due to poor field duplicate precision; and
- For several samples, various detected concentrations that fell below the method reporting limit (MRL) were qualified by the laboratory with "J" to indicate the result is an estimated value below the MRL.

Note that the laboratory narrative from the groundwater samples collected on January 23, 2003 (SDG J2300130) mentions that the surrogate spike recovery for toluene-d8 on the LCS sample (73%) was slightly below QC limits (77 – 124%). Since all of the other surrogate recoveries were rather good (95-109%), it was judged appropriate to not

qualify the associated sample results, therefore no qualifiers were added as a result. The same laboratory narrative also mentions that toluene, 1,1,2-trichloroethane, and tetrachloroethylene spike recoveries in the laboratory control sample (LCS) were slightly below laboratory QC limits. The spike recoveries did however meet EPA Region I guidelines, and therefore no qualification was required.

Quality control samples were collected at the frequency required for presumptive certainty and all Precision, Accuracy, Representativeness, Comparability, Completeness, and Sensitivity (PARCCS) criteria were met. The analysis of Tentatively Identified Compounds (TICs) was not warranted given that these are not drinking water samples, site history is well-known, and the site is not complex. Analyses of VOCs deviated slightly from draft MCP Methods 8021B and 8260; primarily since the compounds reported varied from the draft MCP Method compound lists. However, the draft MCP Method compound lists are not warranted since the site has been well-studied with numerous VOC sampling rounds. No other deviations from the draft MCP methods were made. Therefore, the data set may be used to support associated MCP opinions.

3.2.2 November 2002 Surface Water Results

Surface water sampling round seven for VOCs was completed in November 2002. Groundwater sampling round eleven was completed in November 2002. Field chemistry parameters which were measured during the collection of surface water samples for VOCs in November 2002 were included in the December 2002 monitoring report. Analytical results, which were not available for the December 2002 monitoring report are presented in Table 3-1. Table 3-1 also presents historic data; only VOCs which have been detected in surface water samples are presented. Four VOCs were detected in November 2002: cis-1,2-dichloroethene (1,2-DCE), toluene, PCE, and MTBE, as presented in Table 3-1.

MTBE was detected in all locations at a concentration of less than 1 ug/L. MTBE is partially or wholly attributable to an upstream source since it was detected at CVB-05, the background location.

1,2-DCE was detected at an estimated concentration of 0.23 ug/L at only one location, CVB-8. Toluene was detected at an estimated concentration of 0.16 ug/L at CVB-9. MTBE was detected at an estimated concentration below 1 ug/L at CVB-5, CVB-7, CVB-8, and CVB-9. 1,2-DCE, toluene, and MTBE are not present in the well-defined chlorinated VOC plume, and are therefore not attributable to the site.

The only detection of cVOCs attributable to the site was PCE which was detected at an estimated concentration of 0.15 ug/L at CVB-8. This estimated concentration is well below its trigger level of 2.5 ug/L. No PCE was detected at CVB-9, which is approximately 400 feet downstream of CVB-8. Due to the multiple rounds of non-

detected VOC concentrations in surface water, no statistical analyses have been performed.

3.2.3 November 2002 Groundwater Results

Field chemistry parameters were measured during the collection of groundwater samples in the November 2002 sampling event and included in the December 2002 Phase V monitoring report. A groundwater elevation and flow map was included in the December 2002 Phase V monitoring report based on site gauging activities conducted in November 2002. Analytical results for groundwater samples collected during the November 2002 sampling event are summarized in Table 3-2.

Results for the November 2002 sampling event for EMW-1D indicated an anomalous increase in cVOC concentrations. Therefore, an additional round of sampling and analysis was conducted for EMW-1D in January 2003. Results of the additional sampling demonstrated that the November 2002 results were anomalous and not indicative of a trend or change in conditions. The concentrations detected in the November 2002 sampling round may be an artifact of the sampling and/or laboratory analysis. Therefore, for the data from the January 2003 sampling round for EMW-1D was used for the purposes of data reporting and trend analysis.

The only compounds detected with concentrations above the GW-1 standards for the November 2002 and January 2003 sampling rounds are 1,1-DCE, PCE, and TCE. Graphical depictions of the groundwater plume areas and cross sections for each of these constituents are presented in Figures 3-1 and 3-2. By comparing the nature and extent of the plumes over time, it is clear that natural attenuation is occurring for the subject cVOCs in groundwater at the site. The concentrations and statistical trends of historical chlorinated VOCs in groundwater were discussed in detail in the June 2001 Evaluation of MNA Report. The MNA report also discussed other pertinent groundwater field data and analytical results including a microcosm study.

Groundwater data for 1,1-DCE, PCE and TCE including the November 2002 sampling event were analyzed using the Mann-Kendall Test for trends (Appendix B). A summary of the Mann-Kendall statistical analysis is presented as Table B-1 (Appendix B). A graphical display of VOC concentrations for 1,1-DCE, PCE and TCE versus time for each monitoring well are presented in Appendix C. The trend analysis included only groundwater data from sampling events that utilized low flow sampling methods as discussed in the MNA report. The evaluation showed a statistically significant decreasing trend at the 90% confidence level in three wells (EMW-1D, EMW-3R, and A-1D) for all three compounds and two wells (3G-11 and EMW-11R) for PCE only. Increasing trends were observed at one well (3G-11) for two compounds (1,1-DCE and

TCE); these wells are discussed further below. The remaining Mann-Kendall Statistic tests indicated no significant trends were present.

According to the Mann-Kendall Tests for 3G-11, 1,1-DCE and TCE exhibit increasing trends. Note, however, that concentrations for these VOCs have decreased during the last three rounds; therefore, the Mann-Kendall tests appear to highlight a long-term trend which is not supported by recent data.

3.3 Conclusions Regarding MNA

The most comprehensive and widely accepted policy document regarding monitored natural attenuation is the *OSWER Directive 9200.4-17P – Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites – April, 21, 1999*. This document is also supported by Massachusetts DEP (*DEP Policy WSC #02-500: Monitored Natural Attenuation, public comment draft*). As detailed in the OSWER Directive, the fundamental components of a MNA remedy include: a) source control, b) prevention of plume migration, c) extensive long-term performance monitoring, and d) contingency remedies. In addition, in accordance with 310 CMR 40.0191, MNA requires a site-specific documentation that degradation or destruction of contaminants is the primary attenuation process. These four OSWER and one MCP element have been met as described below:

- **Source Control** The source of chlorinated VOCs has been removed and impacted soil has been cleaned up to a level of no significant risk as documented in the *partial-RAO Statement* IT Corporation, January 22, 2002;

- **Prevention of Plume Migration** The plume has been extensively monitored since 1994. Three lines of evidence supporting MNA have been obtained as described above in Section 3.1. The plume is shrinking laterally and vertically; it is not migrating;

- **Long-term Performance Monitoring** A long-term monitoring plan was developed in 1998 to evaluate the performance of MNA in the future (Phase IV RIP, EMCON, 1998). This plan is updated in Section 5.0 below to be consistent with OSWER Directive Performance Monitoring standards;

- **Contingency Remedies** Contingency remedies were described in the Phase IV RIP (EMCON, 1998). They are re-iterated below in Section 5.0; and

- **Primary Attenuation Process** As discussed above in Section 3.1, based on the MNA Evaluation, biodegradation accounts for a significant portion of the natural attenuation processes.

Based on the anticipated cleanup time of 15 – 35 years, MNA should be considered a permanent solution. OSWER and MCP performance standards for MNA have been met as summarized above. Long-term monitoring plans will ensure that these performance standards will continue to be met until cleanup standards have been reached.

4 SUBSTANTIAL HAZARD EVALUATION

4.1 Introduction

The Phase II CSA (EMCON 1997) concluded that a condition of No Significant Risk to human health related to potential groundwater exposures existed for current uses, and, therefore, such exposures did not pose a Substantial Hazard. The current use at that time was industrial/commercial use, with no use of groundwater for drinking water purposes.

The Phase V Monitoring Reports have continued to evaluate data collected in order to identify conditions that might pose a Substantial Hazard. No such conditions have been identified during Phase V monitoring. Nevertheless, site conditions are re-evaluated here for the presence of a Substantial Hazard in order to support the ROS.

4.2 Potential Exposure Pathways and Receptors

The potential exposure pathways associated with current use of the site are limited. There continues to be no current use of groundwater at the site for drinking water or irrigation purposes. There are also no potential exposures to utility workers, as groundwater depths in the area of the groundwater plume are greater than six feet below ground surface, deeper than would likely be contacted during utility excavations. In addition, groundwater concentrations are lower at shallower depths than at deeper intervals. Shallow groundwater samples collected as part of RAM activities (construction-related) from test excavations in the area of the plume east of Network Drive showed that no VOCs were detected.

As discussed in the Phase II CSA, there is the potential for migration of volatile compounds from groundwater into indoor air of site buildings. At the time of the Phase II CSA, there were no buildings over the groundwater plume. Since the completion of the Phase II, Sun Microsystems Inc. (Sun) has completed the construction of Buildings 5 and 6, which are just southwest of the groundwater plume addressed by this ROS, as shown in Figure 3-1. Since Building 5 is on the periphery of the groundwater plume, migration into indoor air is a potential exposure pathway for current receptors.

The migration of VOCs into Vine Brook may also represent a potential exposure pathway. Vine Brook is upstream of the Shawsheen River, where there is a drinking water intake (for treated water) for the town of Burlington, and therefore use of surface water at downstream locations is a potential exposure pathway. In addition, direct

exposure to environmental receptors at the discharge location to Vine Brook is a potential pathway.

4.3 Evaluation of Substantial Hazard

The potential for a Substantial Hazard related to each of the above exposure pathways is discussed below.

4.3.1 Migration to Indoor Air

As discussed in previous sections, groundwater concentrations at the site have generally declined since the completion of the Phase II CSA. In order to evaluate potential indoor air exposures, groundwater concentrations at monitoring well EMW-7 were considered. Although most of Building 5 is upgradient of the groundwater plume, this well is the closest shallow well. Table 4-1 shows the VOCs detected at this location in the most recent sampling round (December 2002) as compared to MCP GW-2 standards. These standards are based on lifetime residential indoor air exposures and provide a conservative basis for evaluating Substantial Hazard. As shown in Table 4-1, all concentrations are less than GW-2 standards, indicating that a condition of No Significant Risk exists for indoor air exposures, and, therefore, a condition of No Substantial Hazard exists for current receptors.

4.3.2 Migration to Surface Water

In order to evaluate exposure pathways associated with surface water, the Phase V monitoring included sampling in Vine Brook and analysis for VOCs. Trigger levels were set for surface water in the Phase IV Remedy Implementation Plan (EMCON 1998) at concentrations equal to one half the GW-1 standard. It was noted that ecological screening levels are at least an order of magnitude higher than the GW-1 standard for the contaminants of concern. These trigger levels would also be protective of any direct contact by humans with surface water, as such exposures can be expected to be infrequent and of short duration. No trigger level has ever been exceeded for VOCs in Vine Brook surface water. Therefore a condition of No Significant Risk exists for surface water exposures in Vine Brook related to groundwater plume discharge, and therefore, a condition of No Substantial Hazard exists for current receptors.

5 MODIFICATIONS TO EXISTING MONITORING PROGRAM

5.1 Sediment and Surface Water Sampling for Metals

Due to the recent completion in the Fall of 2002 of sediment remediation activities in Central Brook as part of Phase IV comprehensive response actions, a condition of No Significant Risk has been achieved for metals in Central Brook. Therefore, consistent with the conclusions of the partial-RAO of Central Brook (Shaw, March 2003), no further monitoring activities associated with monitoring metal concentrations in Central Brook and Vine Brook sediments and surface water are warranted. As such, metals in sediments and surface water will now be eliminated from the Phase V monitoring program.

5.2 Groundwater and Surface Water Sampling for VOCs

Groundwater and surface water sampling for VOCs is currently being conducted annually and the next round of annual groundwater sampling will occur in November 2003. The only modification to this sampling plan is that the following natural attenuation parameters (dissolved oxygen [field parameter], oxidation reduction potential [field parameter], nitrate [EPA method 300.0], sulfate [EPA method 300.0], methane [EPA method 3810 modified], and total organic carbon [EPA method 9060]) will be analyzed in three wells located in the core of the cVOC plume (EMW-1D, EMW-2D, and 3G-12). The purpose of these analyses will be to detect changed conditions which may affect MNA as described below:

- Dissolved oxygen and oxidation reduction potential will be measured to confirm that anaerobic conditions which are necessary for reductive dechlorination continue to exist within the aquifer;

- Nitrate and sulfate will be measured to confirm that denitrification and sulfate reduction continues to occur within the aquifer;

- Methane will be measured to confirm that methogenesis continues to occur within the aquifer; and

- Total organic carbon will be measured to confirm that the organic carbon in the aquifer continues to remain available to act as electron donors and support reductive dechlorination.

In order to verify attainment of clean-up standards, groundwater sampling for VOCs will be conducted on a quarterly basis once cVOC concentrations decrease below GW-1 cleanup standards. Once it is demonstrated that groundwater VOC concentrations remain below cleanup standards for four consecutive quarters, a RAO report will be prepared for the site.

5.3 Reporting

Currently, Phase V monitoring reports are being submitted every six months in accordance with 310 CMR 40.0891 (5). Although groundwater and surface water sampling will only be conducted annually in November, future Phase V monitoring reports will continue to be submitted on a semi-annual basis in June and December.

According to the *OSWER Directive 9200.4-17P – Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites – April, 21, 1999*, MNA monitoring plans should be designed to accomplish several objectives. These objectives and an explanation on how they will be met are described below:

- **Demonstrate that MNA is occurring as expected** This has, and will continue to be conducted by monitoring trends via the Mann Kendall statistical analysis. Every five years following this ROS submittal, natural attenuation rates will be re-calculated and compared to previous estimates to confirm natural attenuation is proceeding as planned;

- **Detect changed conditions adversely affecting MNA** Monitoring data has, and will continue to be reviewed to assess if there are any new environmental conditions or new releases of contaminants which could reduce MNA efficiency;

- **Identify toxic transformation products** Monitoring data will continue to be evaluated to determine if potential toxic and/or mobile transformation products are being created as part of natural attenuation which could pose a substantial hazard;

- **Verify plume is not expanding** Contour maps and cross-sections through the core of the plume will continue to be developed to verify that the plume is not expanding;

- **Verify no downgradient unacceptable impact** Surface monitoring data will continue to be evaluated to confirm that no Substantial Hazard exists;

- **Demonstrate effective institutional controls** There are no institutional controls at the site. However, the risk characterization assumes that no residential dwellings exist in the vicinity of the well-defined chlorinated VOC plume and that Bedford Well #3 remains inactive until cleanup standards are met. This assumption will continue to be verified; and

- **Verify attainment of remedial objectives** After annual monitoring demonstrates that cleanup standards have been met, one additional full year of quarterly monitoring will be performed. The purpose of the quarterly monitoring is to demonstrate attainment of remedial objectives over four seasons in accordance with DEP policy. These plans are described in more detail in Section 5.2.

5.4 Contingencies

In the event that a sampling round identifies concentrations that indicate a change in conditions, which could eventually pose a Substantial hazard, a Contingency Plan has been developed. In the 1998 Phase IV RIP, the Contingency Plan called for an additional round of sampling and analysis upon detection of concentrations indicative of a change in conditions. The additional round of sampling was proposed to determine whether the detected concentrations are valid or an artifact of the sampling and/or laboratory analysis. Should these additional samples confirm the change in conditions, then subsequent contingency actions would be implemented as described below.

5.4.1 Surface Water

The monitoring of surface water for VOCs in Vine Brook could result in the initiation of contingency actions to prevent a potential Substantial Hazard. This action would be triggered by the detection of surface water concentrations in Vine Brook at levels exceeding GW-1 standards or Ambient Water Quality Criteria (AWQC). The trigger levels proposed in the 1998 Phase IV RIP are concentrations more than half the GW-1 standards or AWQC, whichever is lower (see Table 3 of the Phase IV RIP). If such concentrations were detected for a single sampling round, a second round of samples would be collected to confirm these results. If confirmed, additional samples would be collected upstream to determine whether the increased concentrations were the result of upstream activities on Vine Brook.

Should the upstream sampling indicate that the increased concentrations were likely caused by an upstream source, then quarterly sampling would be conducted to determine whether concentrations were consistently greater than the trigger levels and whether there was a statistically significant increasing trend in concentrations (using the Mann-Kendall

trend test). If such a trend were established, surface water quality at further downstream locations would be conducted to evaluate the rate of decrease in concentrations and the potential threat (or lack of threat) to downstream receptors. If, based on downstream sampling, concentrations were found to approach GW-1 standards at the Shawsheen River surface water intake, remedial actions would be implemented to prevent exposure to VOCs. This scenario is considered highly unlikely, however, based on Vine Brook surface water sampling results, the decreasing concentrations of VOCs in the impacted groundwater, and the large distance from the site to the surface water intake.

5.4.2 Groundwater

Similar to the monitoring of surface water, the monitoring of groundwater for VOCs in Vine Brook could result in the initiation of contingency actions to prevent a potential Substantial Hazard. This action would be triggered by the detection of anomalously high groundwater concentrations exceeding previously detected concentrations by an order of magnitude or greater. An additional trigger would be the emergence of a statistically significant upward trend which indicates that the assumptions which the MNA remedy are based upon are invalid. In addition to the detection of concentration spikes, Mann-Kendall statistical analyses would be conducted to determine the presence of increasing concentration trends. If such concentrations and trends were identified for a single sampling round, a second round of samples would be collected to confirm these results. If confirmed, quarterly sampling in the identified well(s) will be initiated and results evaluated. If warranted, additional groundwater monitoring wells will be installed to further assess and evaluate the increased VOC concentrations.

Finally, if warranted based on the additional data described above, an evaluation will be conducted to identify appropriate remedial action measures that could be implemented at the site to control further migration of impacted groundwater. Permanent and/or Temporary Solutions would be re-evaluated in an addendum to the Phase III RAP and implemented as part of a Phase IV RIP Addendum.

6 CONCLUSIONS AND ROS OPINION

Given the timeframes and reliance on MNA for the achievement of a Permanent Solution (as described in Section 3.0 of this Submittal), a Remedy Operation Status Submittal is determined to be applicable for the site at this time. It is the opinion of the Licensed Site Professional that current and planned site conditions and activities would achieve and maintain the performance standards for Remedy Operation Status, as described in 310 CMR 40.0893 (2) and as discussed below:

- The selected remedial action alternative, MNA, has been extensively studied and evaluated. Natural attenuation is occurring at the site. Based on attenuation rate calculations, this remedial action alternative is expected to reach cleanup standards in a reasonable timeframe and is expected to achieve a Permanent Solution;

- Phase V monitoring activities associated with MNA have been successfully performed in accordance with the Phase IV RIP and 310 CMR 40.0890 since 1999. These monitoring activities demonstrate that the OSWER and MCP performance standards of MNA have been met;

- Sources of oil and/or hazardous material have been eliminated or controlled in accordance with 310 CMR 40.1003 (5). Source elimination activities were discussed in the partial-RAO Statement submitted to DEP January 22, 2002; and

- No Substantial Hazard exists at the site as discussed in Section 4.0;

Phase V monitoring reports will be submitted every six months while in ROS in accordance with 310 CMR 40.0893 (2) (e).

7 PUBLIC INVOLVEMENT ACTIVITIES

Although not formally required, the public involvement activities listed below will be conducted in conjunction with the submittal of this Phase V Monitoring Report and Remedy Operation Status (ROS) Statement. These public involvement activities coincide with those being conducted with the concurrent submittals of the Phase IV Final Inspection Report and Completion Statement and the partial-Response Action Outcome (RAO) Statement.

- A four-page newsletter was being mailed to the PIP Mailing List on March 7, 2003 announcing a public meeting. Announcements were also made in the local papers and via a press release;

- A public meeting will be held on March 20, 2003 at the Burlington School Committee Room, School Administration Building, Burlington High School, 123 Cambridge Street at 7:00 P.M. (EST). The primary purpose of the public meeting is to discuss the partial-RAO. The public meeting will also be used to present the draft Phase IV FIR and this draft Phase V Monitoring Report and ROS Statement;

- The Draft Phase V Monitoring Report and ROS Statement will be made available for review. A complete hard-copy will be available at DEP's NERO office and the Burlington Town Library. Several copies will also be also available at the public meeting (March 20, 2003); and

- The public comment period will be from March 20, 2003 through April 10, 2003.

8 REFERENCES

EMCON 1998. Phase IV Remedy Implementation Plan, Former RCA Facility, Burlington, Massachusetts, December.

EMCON 1998. Release Abatement Measure Completion Report, Former RCA Facility, Burlington, Massachusetts, February.

EMCON 1997. Phase III Remedial Action Plan, Former RCA Facility, Burlington, Massachusetts, November.

EMCON 1997. Phase II Comprehensive Site Assessment, Former RCA Facility, Burlington, Massachusetts, June.

Geraghty & Miller, Inc. 1995. Phase I Site Investigation Report Martin Marietta Technologies, Inc., August.

Goldberg-Zoino and Associates, Inc. 1986a. Site Investigation RCA - Burlington, Massachusetts, February.

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EMCON 1999 Phase V Monitoring Report, Former RCA Facility, Burlington, MA, June

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IT Corporation 2001 Phase V Monitoring Report, Former RCA Facility, Burlington, MA, June.

IT Corporation 2001 Phase V Monitoring Report, Former RCA Facility, Burlington, MA, December.

IT Corporation 2001 Phase V Monitoring Report Addendum, Former RCA Facility, Burlington, MA, August.

IT Corporation 2001 Evaluation of Monitored Natural Attenuation, Former RCA Facility, Burlington, MA, May.

IT Corporation 2001 Phase III Investigation and Treatability Study Workplan, Former RCA Facility, Burlington, MA, August.

IT Corporation, 2002 Partial Response Action Outcome Statement, Former RCA Facility, Burlington, MA, January.

Shaw Environmental and Infrastructure, Inc., 2002. Phase V Monitoring Report. One Network Drive, Former RCA Facility, 183 Bedford Street, Burlington, MA, June. RTN 3-0265.

Shaw Environmental and Infrastructure, Inc., 2002. Phase III Remedial Action Plan Addendum. One Network Drive, Former RCA Facility, 183 Bedford Street, Burlington, MA, July. RTN 3-0265.

Shaw Environmental and Infrastructure, Inc., 2002. Phase IV Remedy Implementation Plan Addendum. One Network Drive, Former RCA Facility, 183 Bedford Street, Burlington, MA, July. RTN 3-0265.

Shaw Environmental and Infrastructure, Inc., 2002. Phase V Monitoring Report. One Network Drive, Former RCA Facility, 183 Bedford Street, Burlington, MA, December. RTN 3-0265.

Shaw Environmental and Infrastructure, Inc., 2003. Partial RAO Statement for Central Brook. One Network Drive, Former RCA Facility, 183 Bedford Street, Burlington, MA, March. RTN 3-0265.

United States Environmental Protection Agency 1996 *Low-Flow Groundwater Sampling Procedures.*

9 LIST OF ACRONYMS

1,1,1-TCA	Trichloroethane
AUL	Activity and Use Limitations
BWSC	Bureau of Waste Site Clean-up
COCs	Contaminants of Concern
CSA	Comprehensive Site Assessment
DEP	Department of Environmental Protection
EPH	Extractable Petroleum Hydrocarbons
IRA	Immediate Response Action
MCP	Massachusetts Contingency Plan
OHM	Oil and/or Hazardous Materials
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphynols
PIP	Public Involvement Plan
RAMs	Release Abatement Measures
RAO	Response Action Outcome
RAP	Remedial Action Plan
RfC	Reference Concentrations
RfDs	Reference Doses
RIP	Remedy Implementation Plan
SVOCs	Semivolatile Organic Compounds
TAC	Target Air Concentrations
TCE	Trichloroethene
TPH	Total Petroleum Hydrocarbons
UCLs	Upper Concentration Limits
USTs	Underground Storage Tanks
VOCs	Volatile Organic Compounds

TABLES

FIGURES

APPENDIX A

LABORATORY ANALYTICAL REPORTS

COPIES OF APPENDICES ARE AVAILABLE AT THE BURLINGTON PUBLIC LIBRARY IN THE LOCKHEED MARTIN REPOSITORY

APPENDIX B

MANN-KENDALL TREND TESTS

APPENDIX C

DATA GRAPHS

APPENDIX D

COPY OF COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM BWSC-108

Table 3-1

Summary of Surface Water Sampling Results for Volatile Organic Compounds
Phase V Monitoring Report and ROS Statement
Former RCA Facility
Burlington, Massachusetts

Sample Location Identifier	Date Sampled	1,1,1-Trichloro ethane	1,1-Dichloro ethylene	Benzene	cis-1,2-Di-chloroethylene	m-Dichloro benzene	Methyl-tert-butyl-ether	p-Dichloro benzene	Tetrachloro ethylene	Toluene	Trichloro ethylene
CVB-05	11/12/2001	<1	**0.4 J**	<1	<1	<1	<1	<1	<1	<1	<1
	11/21/2002	<1	<1	<1	<1	<1	**0.58 J**	<1	<1	<1	<1
CVB-07	03/26/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	06/19/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	08/24/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/18/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/22/2000	**2**	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/12/2001	<1	**0.9 J**	**0.3 J**	<1	**0.7 J**	**0.4 J**	**0.4 J**	<1	<1	<1
Duplicate	11/12/2001	<1	**0.96 J**	**0.3 J**	<1	<1	**0.5 J**	<1	<1	<1	<1
	11/21/2002	<1	<1	<1	<1	<1	**0.54 J**	<1	<1	<1	<1
Duplicate	11/21/2002	<1	<1	<1	<1	<1	**0.57 J**	<1	<1	<1	<1
CVB-08	03/26/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	06/19/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	08/24/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/18/1999	<1	2	<1	<1	<1	<1	<1	2	<1	1
	11/22/2000	2	<1	<1	<1	<1	<1	<1	2	<1	1
Duplicate	11/22/2000	<1	<1	<1	<1	<1	<1	<1	2	<1	1
	11/12/2001	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/21/2002	<1	<1	<1	**0.23 J**	<1	**0.63 J**	<1	**0.15 J**	<1	<1
CVB-09	03/26/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	06/19/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	08/24/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/18/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/22/2000	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
	11/12/2001	<1	**0.4 J**	**0.2 J**	<1	<1	**0.4 J**	<1	<1	<1	<1
	11/21/2002	<1	<1	<1	<1	<1	**0.6 J**	<1	<1	**0.16 J**	<1
Phase IV Trigger Levels		NA	3.5	NA	35	NA	NA	NA	2.5	NA	2.5

Notes:
J = Estimated concentration, according to data validation protocol.
NA = Phase IV Trigger Levels not established or available.
Table presents only detected Volatile Organic Compounds (VOCs).
All concentrations are in micrograms per liter (ug/l) or parts per billion (ppb).
Bold denoted detected concentrations.

Table 3-2

Summary of Groundwater Sampling Results for VOCs
Phase V Monitoring Report and ROS Statement
Former RCA Facility
Burlington, Massachusetts

Monitoring Well Number	Date Sampled	Benzene	Chloroform	1,1-Dichloro ethane	cis-1,2-Di-chloroethylene	1,1-Dichloro ethylene	Ethylbenzene	Methylene chloride	Methyl tert-butyl ether	Tetrachloro ethylene	Toluene	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethylene	Trichloro fluoromethane	Xylene (total)	Vinyl chloride	1,2-Dichloro-ethane	Chloro-benzene	Total VOCs
3G-11	08/25/1994	ND	ND	29	3.5	31	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	63.5
	11/30/1994	ND	ND	25	3.4	23	ND	ND	ND	ND	ND	ND	ND	8.8	NA	ND	ND	ND	ND	60.2
	11/14/1996	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<3	<1	NA	NA	0
	05/13/1998	<0.2	<0.3	20	3	18	<0.2	<0.4	<0.3	<0.4	<0.2	<0.4	<0.5	10	<0.3	<0.3	<0.3	<0.5	<0.3	51
	08/20/1998	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0
	11/19/1998	<1	<1	21	3	18	1	<1	<1	<1	<1	<1	<1	10	<1	12	<1	<1	<1	65
	02/18/1999	<1	<1	13	1	13	<1	<1	<1	<1	<1	<1	<1	4	<1	<3	<1	<1	<1	31
	05/13/1999	<1	<1	19	2	20	<1	<1	<1	<1	<1	<1	<1	9	<1	<3	<1	<1	<1	50
	06/15/2000	<1	<1	19	3	17	<1	<1	<1	<1	<1	<1	<1	6	<1	<3	<1	<1	<1	45
	08/17/2000	<1	<1	22	3	23	<1	3	<1	<1	<1	<1	<1	11	<1	<3	<1	<1	<1	62
	11/14/2000	<1	<1	34	5	36	<1	<5	<1	<1	<1	<1	<1	16	<1	<3	<1	<1	<1	91
	02/13/2001	<1	<1	25	4	25	<1	<1	<1	<1	<1	<1	<1	13	<1	<3	<1	<1	<1	67
	11/14/2001	<1	<1	19	3	24	<1	<1	<1	<1	<1	<1	<1	9.9	12	<3	<1	<1	<1	67.9
	11/20/2002	<1	<1	16	2.7	20	<1	<5	<1	0.26 J	<1	<1	<1	8.3	6.5	<3	<1	<1	<1	53.8 J
3G-12	08/25/1994	ND	ND	46	3.7	220	ND	2.9	ND	5.9	ND	36	5.6	20	ND	ND	ND	ND	ND	340.1
	12/01/1994	ND	ND	65	8.1	240	ND	ND	ND	11	ND	55	7.6	55	ND	ND	ND	ND	ND	441.7
	11/13/1996	<1	<1	18	<1	72	<1	<5	<1	6	<1	14	<1	56	<1	<3	<1	NA	NA	166
	05/13/1998	<0.2	<0.3	24	5	110	<0.2	<0.4	<0.3	12	<0.2	20	<0.5	44	<0.3	<0.3	<0.3	<0.5	<0.3	215
	08/20/1998	<2.0	<1.0	9.6	5.5	44	<2.0	<1.0	<1.0	11	<2.0	9.5	<2.0	33	1.4	<1.0	<2.0	<1.0	<2.0	114
	11/19/1998	<1	<1	45	5	170	<1	<1	<1	10	<1	45	4	38	<1	<3	<1	<1	<1	317
	02/18/1999	<1	<1	41	5	54	<1	<1	<1	11	<1	36	<1	46	<1	<3	<1	<1	<1	193
	05/13/1999	<1	<1	45	10	170	<1	<1	<1	17	<1	52	<1	69	<1	<3	<1	<1	<1	363
	06/16/2000	<1	<1	22	12	79	<1	<1	<1	16	<1	25	<1	63	<1	<3	1	<1	<1	218
	08/17/2000	<1	<1	27	9	130	<1	<1	1	15	<1	64	1	61	<1	<3	2	<1	<1	310
	11/13/2000	<1	<1	31	8	93	<1	<5	<1	15	<1	61	<1	48	<1	<3	<1	<1	<1	256
	02/13/2001	<1	<1	25	14	76	<1	<1	<1	24	<1	41	<1	46	<1	<3	2	<1	<1	228
	11/14/2001	<1	<1	9.5	4.5	31 J	<1	<1	<1	6.2	<1	15	<1	19	1.6 J	<3	<1	<1	<1	86.8 J
	11/20/2002	<1	0.13 J	15	3.2	49 J	<1	<5	1.6	4.9	<1	29	0.41 J	17	0.83 J	<3	<1	<1	<1	121.1 J
Duplicate	11/20/2002	<1	0.12 J	14	3.1	49 J	<1	<5	1.6	4.9	0.21 J	28	0.41 J	17	0.74 J	<3	<1	0.26 J	<1	119.3 J
EMW-10D	05/06/1997	<1	<1	<1	3	<1	<1	<5	<1	1	<1	<1	<1	3	<1	<3	<1	NA	NA	7
	05/11/1998	<1	<1	<1	10	1	<1	<5	<1	18	<1	<1	<1	55	<1	<3	<1	<1	<1	84
	08/18/1998	<2.0	<1.0	<1.0	6.3	<1.0	<2.0	<1.0	<1.0	9.7	<2.0	1	<2.0	36	<1.0	<1.0	<2.0	<1.0	<2.0	53
	11/18/1998	<1	<1	<1	<1	<1	3	<1	<1	3	4	<1	<1	7	<1	29	<1	<1	<1	46
	02/17/1999	<1	<1	<1	2	<1	<1	<1	<1	6	<1	<1	<1	23	<1	<3	<1	<1	<1	31
	05/12/1999	<1	<1	1	2	<1	<1	<1	<1	2	<1	<1	<1	6	<1	<3	<1	<1	<1	11
	05/03/2000	<1 J	<1 J	<1 J	4 J	<1 J	<1 J	<1 J	<1 J	7 J	<1 J	2 J	<1 J	22 J	<1 J	<3 J	<1 J	<1 J	<1 J	35
	06/15/2000	<1	<1	<1	2	<1	<1	<1	<1	2	<1	<1	<1	4	<1	<3	<1	<1	<1	8
	08/17/2000	<1	<1	1	5	2	<1	<1	<1	7	<1	3	<1	25	<1	<3	<1	<1	<1	43
	11/13/2000	<1	<1	<1	6	1	<1	<5	<1	9	<1	2	<1	31	<1	<3	<1	<1	<1	49
	02/12/2001	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	7	<1	<3	<1	<1	<1	9
	11/14/2001	<1	<1	0.87 J	3.1	1.2	<1	<1	<1	4.3	<1	1.9	<1	17	1.2 J	<3	<1	<1	<1	29.6 J
Duplicate	11/14/2001	<1	<1	0.9 J	3.2	1	<1	<1	<1	4.4	<1	1.9	<1	17	1.2 J	<3	<1	<1	<1	29.6 J
	11/20/2002	<1	0.21 J	0.33 J	2.4	1.1	<1	<5	14	4.1	<1	5.6	<1	13	0.57 J	<3	<1	<1	<1	41.3 J
EMW-10R	05/06/1997	<1	5	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	3	<1	<3	<1	NA	NA	8
	05/12/1998	5	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	2	<1	<3	<1	<1	<1	7
	08/19/1998	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	5.1	<1.0	<1.0	<2.0	<1.0	<2.0	5.1
EMW-10R	11/20/1998	2	<1	<1	1	<1	<1	<1	<1	2	<1	<1	<1	10	<1	<3	<1	<1	<1	15
	02/17/1999	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<3	<1	<1	<1	4
	05/13/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	4	<1	<3	<1	<1	<1	4
	05/03/2000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3	<1	<3	<1	<1	<1	3
	06/16/2000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<3	<1	<1	<1	1
	08/17/2000	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	2	<1	5	<1	<3	<1	<1	<1	8
	11/14/2000	<1	<1	<1	<1	<1	<1	<5	<1	2	<1	6	<1	9	<1	<3	<1	<1	<1	17
	02/13/2001	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	4	<1	<3	<1	<1	<1	6

Table 3-2

Summary of Groundwater Sampling Results for VOCs
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Monitoring Well Number	Date Sampled	Benzene	Chloroform	1,1-Dichloro ethane	cis-1,2-Di-chloroethylene	1,1-Dichloro ethylene	Ethylbenzene	Methylene chloride	Methyl tert-butyl ether	Tetrachloro ethylene	Toluene	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethylene	Trichloro fluoromethane	Xylene (total)	Vinyl chloride	1,2-Dichloro-ethane	Chloro-benzene	Total VOCs
	11/15/2001	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.6	<5	<3	<1	<1	<1	1.6
	11/21/2002	<1	<1	<1	0.31 J	0.33 J	<1	<5	0.88 J	0.18 J	<1	1.3	<1	2.3	<5	<3	<1	<1	<1	5.3
EMW-11D	05/06/1997	<1	<1	11	4	51	<1	<5	<1	10	<1	9	<1	31	<1	<3	<1	NA	NA	116
	05/12/1998	<0.2	<0.3	18	9	82	<0.2	<0.4	<0.3	18	<0.2	55	<0.5	56	<0.3	<0.3	<0.3	<0.5	<0.3	238
	08/19/1998	<2.0	<1.0	8.2	4.2	37	<2.0	<1.0	<1.0	6.7	<2.0	27	<2.0	24	<1.0	<1.0	<2.0	<1.0	<2.0	107.1
	11/19/1998	<1	<1	8	4	33	2	<1	<1	7	3	26	<1	27	<1	27	<1	<1	<1	137
	02/17/1999	<1	<1	6	3	30	<1	<1	<1	6	<1	21	<1	23	<1	<3	<1	<1	<1	89
	05/12/1999	<1	<1	7	4	29	<1	<1	<1	6	<1	31	<1	23	<1	<3	<1	<1	<1	100
EMW-11R	05/06/1997	<1	<1	10	9	43	<1	<5	<1	12	<1	5	<1	39	<1	<3	<1	NA	NA	118
	05/13/1998	<1	<1	22	28	53	<1	<5	<1	23	<1	10	<1	77	<1	<3	<1	<1	<1	213
	08/20/1998	<2.0	<1.0	11	14	27	<2.0	<1.0	<1.0	15	<2.0	4.6	<2.0	40	<1.0	<1.0	<2.0	<1.0	<2.0	111.6
	11/19/1998	<1	<1	13	16	28	<1	<1	<1	20	<1	6	<1	50	<1	<3	<1	<1	<1	133
	02/17/1999	1	<1	9	9	13	<1	<1	<1	4	<1	2	<1	22	<1	<3	<1	<1	<1	60
	05/12/1999	<1	<1	12	14	23	<1	<1	<1	12	<1	10	<1	40	<1	<3	<1	<1	<1	111
	06/16/2000	<1	<1	11	15	17	<1	<1	<1	6	<1	3	<1	29	<1	<3	<1	<1	<1	81
	08/17/2000	<1	<1	14	17	29	<1	<1	<1	8	<1	5	<1	39	<1	<3	<1	<1	<1	112
	11/14/2000	<1	<1	20	26	45	<1	<5	<1	21	<1	10	<1	68	<1	<3	<1	<1	<1	190
	02/13/2001	<1	<1	14	18	32	<1	<1	<1	18	<1	7	<1	53	<1	<3	<1	<1	<1	142
	11/15/2001	0.56 J	<1	7	9.6	13	<1	<1	<1	3.3	<1	2	<1	23	<5	<3	<1	<1	<1	58.5 J
	11/21/2002	0.36 J	<1	7.7	11	15	<1	<5	<1	5.4	1.3	1.7	<1	23	<5	<3	<1	<1	<1	65.5 J
EMW-1D	11/13/1996	<1	<1	14	<1	94	<1	<5	<1	12	<1	<1	<1	62	<1	<3	1	NA	NA	183
	05/12/1998	<0.2	<0.3	23	33	120	<0.2	<0.4	<0.3	30	<0.2	3	<0.5	160	<0.3	5	3	<0.5	<0.3	377
	08/18/1998	<2.0	<1.0	12	22	61	<2.0	<1.0	<1.0	22	<2.0	1.1	<2.0	92	<1.0	<1.0	2.2	<1.0	<2.0	212.3
	11/20/1998	<1	<1	5	9	20	<1	<1	4	11	<1	<1	<1	46	<1	7	2	<1	<1	104
	05/13/1999	<1	<1	6	9	22	<1	<1	2	10	<1	210	<1	39	<1	<3	<1	<1	<1	298
	06/16/2000	<1	<1	5	19	22	<1	<1	<1	16	<1	34	<1	69	<1	<3	2	<1	<1	167
	08/17/2000	<1	<1	3	2	<1	<1	<1	<1	4	<1	7	<1	1	<1	<3	<1	<1	<1	17
	11/13/2000	<1	<1	5	2	12	<1	<5	3	3	<1	72	<1	9	<1	<3	<1	<1	<1	106
	02/12/2001	<1	<1	3	1	8	<1	<1	3	2	<1	53	<1	6	<1	<3	<1	<1	<1	76
	11/15/2001	<1	<1	2.9	0.52 J	4.6	<1	<1	0.96 J	1.1	<1	22	<1	2.6	1.3 J	<3	<1	<1	<1	36 J
	11/20/2002	0.14 J	<1	5.8	20	31	<1	<5	0.72 J	19	<1	13	<1	73 J	0.64 J	<3	2	<1	0.44 J	165.7 J
	01/23/2003	<1.0	<1.0	2.5	3.1	7.8	<1.0	<5.0	<1.0	5.1	<1.0	24	<1.0	17	<1.0	<3.0	<1.0	<1.0	<1.0	59.5
Duplicate	01/23/2003	<1.0	<1.0	2.8	3.4	11	<1.0	<5.0	<1.0	4.9	<1.0	24	<1.0	18	<1.0	<3.0	<1.0	<1.0	<1.0	64.1
EMW-2D	11/13/1996	<1	<1	14	<1	51	<1	13	<1	12	<1	<1	<1	72	<1	<3	<1	NA	NA	162
	05/13/1998	<0.2	<0.3	13	11	40	<0.2	<0.4	<0.3	17	<0.2	2	<0.5	64	<0.3	<0.3	<0.3	<0.5	<0.3	147
	08/20/1998	<2.0	<1.0	7	6.2	23	<2.0	<1.0	<1.0	9.2	<2.0	<1.0	<2.0	38	<1.0	<1.0	<2.0	<1.0	<2.0	83.4
	11/19/1998	<1	<1	7	6	24	<1	<1	<1	10	<1	<1	<1	42	<1	7	<1	<1	<1	96
	02/18/1999	<1	<1	6	4	19	<1	<1	<1	7	<1	<1	<1	37	<1	<3	<1	<1	<1	73
EMW-2D	05/13/1999	<1	<1	7	5	8	<1	<1	<1	8	<1	<1	<1	32	<1	<3	<1	<1	<1	60
	06/15/2000	<1	<1	7	5	20	<1	<1	<1	6	<1	<1	<1	23	<1	<3	<1	<1	<1	61
	08/17/2000	<1	<1	8	7	24	<1	<1	<1	10	<1	2	<1	39	<1	<3	<1	<1	<1	90
	11/13/2000	<1	<1	9	8	32	<1	<5	<1	13	<1	2	<1	52	<1	<3	<1	<1	<1	116
	02/13/2001	<1	<1	7	6	24	<1	<1	<1	11	<1	1	<1	41	<1	<3	<1	<1	<1	90
	11/14/2001	<1	<1	5.1	5	20	<1	<1	<1	7.8	<1	<1	<1	33	0.4 J	<3	<1	<1	<1	71.3 J
	11/20/2002	<1 J	<1 J	3.8 J	4.4 J	14 J	<1 J	<5 J	<1 J	6.2 J	<1 J	<1 J	<1 J	26 J	0.45 J	<3 J	<1 J	<1 J	<1 J	54.9 J
EMW-3R	05/13/1998	<0.2	<0.3	6	18	21	<0.2	<0.4	<0.3	14	<0.2	6	<0.5	63	<0.3	<0.3	<0.3	<0.5	<0.3	128
	08/20/1998	<2.0	<1.0	3.5	9.8	12	<2.0	<1.0	<1.0	14	<2.0	3.4	<2.0	42	<1.0	<1.0	<2.0	<1.0	<2.0	84.7
	11/19/1998	<1	<1	4	10	12	<1	<1	<1	15	<1	3	<1	44	<1	<3	<1	<1	<1	88
	02/18/1999	<1	<1	2	7	9	<1	<1	<1	10	<1	2	<1	39	<1	<3	<1	<1	<1	69
	05/13/1999	1	<1	4	10	11	<1	<1	<1	7	<1	2	<1	33	<1	<3	<1	<1	<1	68
	06/16/2000	<1	<1	4	10	10	<1	<1	<1	7	<1	2	<1	28	<1	<3	<1	<1	<1	61
	08/17/2000	<1	<1	5	11	14	<1	<1	<1	11	<1	4	<1	39	<1	<3	<1	<1	<1	84
	11/14/2000	1	<1	6	15	17	<1	<5	<1	4	<1	5	<1	42	<1	<3	<1	<1	<1	90
	02/13/2001	<1	<1	4	10	11	<1	<1	<1	3	<1	3	<1	30	<1	<3	<1	<1	<1	61

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Monitoring Well Number	Date Sampled	Benzene	Chloroform	1,1-Dichloro ethane	cis-1,2-Di-chloroethylene	1,1-Dichloro ethylene	Ethylbenzene	Methylene chloride	Methyl tert-butyl ether	Tetrachloro ethylene	Toluene	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethylene	Trichloro fluoromethane	Xylene (total)	Vinyl chloride	1,2-Dichloro-ethane	Chloro-benzene	Total VOCs
	11/15/2001	<1	<1	2.6	6.1	6.2	<1	<1	<1	1.8	<1	1.5	<1	23	<5	<3	<1	<1	<1	41.2
	11/21/2002	<1	<1	2.7	5.6	4.7	<1	<5	<1	2.5	<1	0.34 J	<1	22	0.39 J	<3	<1	<1	<1	38.2 J
EMW-7	11/13/1996	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<3	<1	NA	NA	0
	05/12/1998	<0.2	<0.3	<0.5	<0.4	3	<0.2	<0.4	<0.3	4	<0.2	<0.4	<0.5	3	<0.3	<0.3	<0.3	<0.5	<0.3	10
	08/18/1998	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	1.9	<2.0	1.5	<2.0	1.6	<1.0	<1.0	<2.0	<1.0	<2.0	5
	11/20/1998	<1	<1	<1	<1	<1	<1	<1	<1	4	<1	5	<1	3	<1	9	<1	<1	<1	21
	02/17/1999	<1	<1	2	1	<1	<1	<1	<1	5	<1	11	<1	2	<1	<3	<1	<1	<1	21
	05/13/1999	<1	<1	2	2	2	<1	<1	<1	4	<1	19	<1	3	<1	<3	<1	<1	<1	32
	05/03/2000	<1	<1	1	1	<1	<1	<1	<1	3	<1	3	<1	2	<1	<3	<1	<1	<1	10
	06/16/2000	<1	<1	2	3	<1	<1	<1	<1	5	<1	7	<1	<1	<1	<3	<1	<1	<1	17
	08/17/2000	<1	<1	6	5	15	<1	<1	9	5	<1	66	<1	21	<1	<3	1	<1	<1	128
	11/13/2000	<1	<1	7	7	<1	<1	<5	<1	11	<1	10	<1	5	<1	<3	<1	<1	<1	40
	11/15/2001	<1	<1	4.2	4.3	<1	<1	<1	0.59 J	6.3	<1	3.1	<1	2.3	3.7 J	<3	0.3 J	<1	<1	24.8 J
	11/20/2002	<1	<1	1.3	2.2	0.37 J	<1	<5	2.1	1.5	<1	0.58 J	<1	1.9	1.5 J	<3	<1	<1	<1	11.5 J
MW-OA-1	11/29/1994	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	ND
	08/19/1998	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0
MW3H-1D	11/29/1994	ND	4.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	4.2
	11/12/1996	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<3	<1	NA	NA	0
	05/12/1998	<0.2	<0.3	<0.5	<0.4	2	<0.2	<0.4	<0.3	1	<0.2	<0.4	<0.5	4	<0.3	<0.3	<0.3	<0.5	<0.3	7
	08/20/1998	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0
	11/19/1998	<1	<1	<1	<1	2	1	<1	<1	<1	<1	<1	<1	1	<1	11	<1	<1	<1	15
	02/19/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
	05/13/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
	06/16/2000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
	08/17/2000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
	11/13/2000	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
	02/12/2001	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
	11/14/2001	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<3	<1	<1	<1	0
	11/20/2002	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	0.32 J	<5	<3	<1	<1	<1	0.32 J

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Monitoring Well Number	Date Sampled	Benzene	Chloroform	1,1-Dichloro ethane	cis-1,2-Di-chloroethylene	1,1-Dichloro ethylene	Ethylbenzene	Methylene chloride	Methyl tert-butyl ether	Tetrachloro ethylene	Toluene	1,1,1-Trichloro ethane	1,1,2-Trichloro ethane	Trichloro ethylene	Trichloro fluoromethane	Xylene (total)	Vinyl chloride	1,2-Dichloro-ethane	Chloro-benzene	Total VOCs
MW3H-1S	11/29/1994	ND	ND	5.4	3.1	22	ND	ND	ND	3.7	ND	ND	ND	19	NA	ND	ND	NA	NA	53.2
	11/12/1996	<1	<1	<1	<1	5	<1	<5	<1	1	<1	<1	<1	5	<1	<3	<1	NA	NA	11
	05/12/1998	<0.2	<0.3	<0.5	<0.4	3	<0.2	<0.4	<0.3	1	<0.2	<0.4	<0.5	8	<0.3	<0.3	<0.3	<0.5	<0.3	12
	08/19/1998	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0
	11/19/1998	<1	<1	<1	<1	<1	1	<1	<1	<1	1	<1	<1	<1	<1	12	<1	<1	<1	14
	02/18/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
	05/12/1999	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
	06/16/2000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
	08/17/2000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
	11/13/2000	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
	02/12/2001	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
	11/14/2001	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<3	<1	<1	<1	0
	11/20/2002	<1	<1	<1	<1	0.23 J	<1	<5	<1	0.14 J	<1	<1	<1	0.29 J	0.3 J	<3	<1	<1	<1	0.96 J
MW3H-3	08/23/1994	ND	ND	ND	ND	ND	ND	12	ND	ND	2.4	ND	ND	ND	ND	2.8	ND	NA	NA	17.2
	12/01/1994	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	ND
	11/14/1996	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<3	<1	NA	NA	0
	05/03/2000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
	08/17/2000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<1	<1	<1	0
MWA-1D	11/29/1994	ND	2.4	16	7.6	82	ND	ND	ND	17	ND	27	ND	64	NA	ND	ND	NA	NA	216
	11/12/1996	<1	<1	11	<1	76	<1	<5	<1	19	<1	13	<1	68	<1	<3	<1	NA	NA	187
	05/13/1998	<0.2	<0.3	17	11	73	<0.2	<0.4	<0.3	24	<0.2	26	<0.5	66	<0.3	<0.3	<0.3	<0.5	<0.3	217
	08/19/1998	<2.0	<1.0	9.4	6.2	42	<2.0	<1.0	<1.0	12	<2.0	17	<2.0	39	<1.0	<1.0	<2.0	<1.0	<2.0	125.6
	11/20/1998	<1	<1	10	6	41	<1	<1	<1	14	<1	22	<1	41	<1	8	<1	<1	<1	142
	02/17/1999	<1	<1	8	4	28	<1	<1	<1	9	<1	17	<1	33	<1	<3	<1	<1	<1	99
	05/12/1999	<1	<1	9	6	36	<1	<1	<1	9	<1	30	<1	36	<1	<3	<1	<1	<1	126
	06/16/2000	<1	<1	6	5	24	<1	<1	<1	9	<1	17	<1	26	<1	<3	<1	<1	<1	87
	08/17/2000	<1	<1	3	2	4	<1	<1	<1	2	<1	3	<1	4	<1	<3	<1	<1	<1	18
	11/13/2000	<1	<1	9	6	37	<1	<5	<1	11	<1	21	<1	35	<1	<3	<1	<1	<1	119
	02/13/2001	<1	<1	7	5	29	<1	<1	<1	11	<1	17	<1	34	<1	<3	<1	<1	<1	103
	11/14/2001	<1	<1	4.7	3.6	24	<1	<1	<1	6.2	<1	8.9	<1	24	0.4 J	<3	<1	<1	<1	71.8 J
	11/20/2002	<1	0.11 J	3.7	3.4	21	<1	<5	0.59 J	5.8	<1	6	<1	20	0.6 J	<3	<1	<1	<1	61.2 J

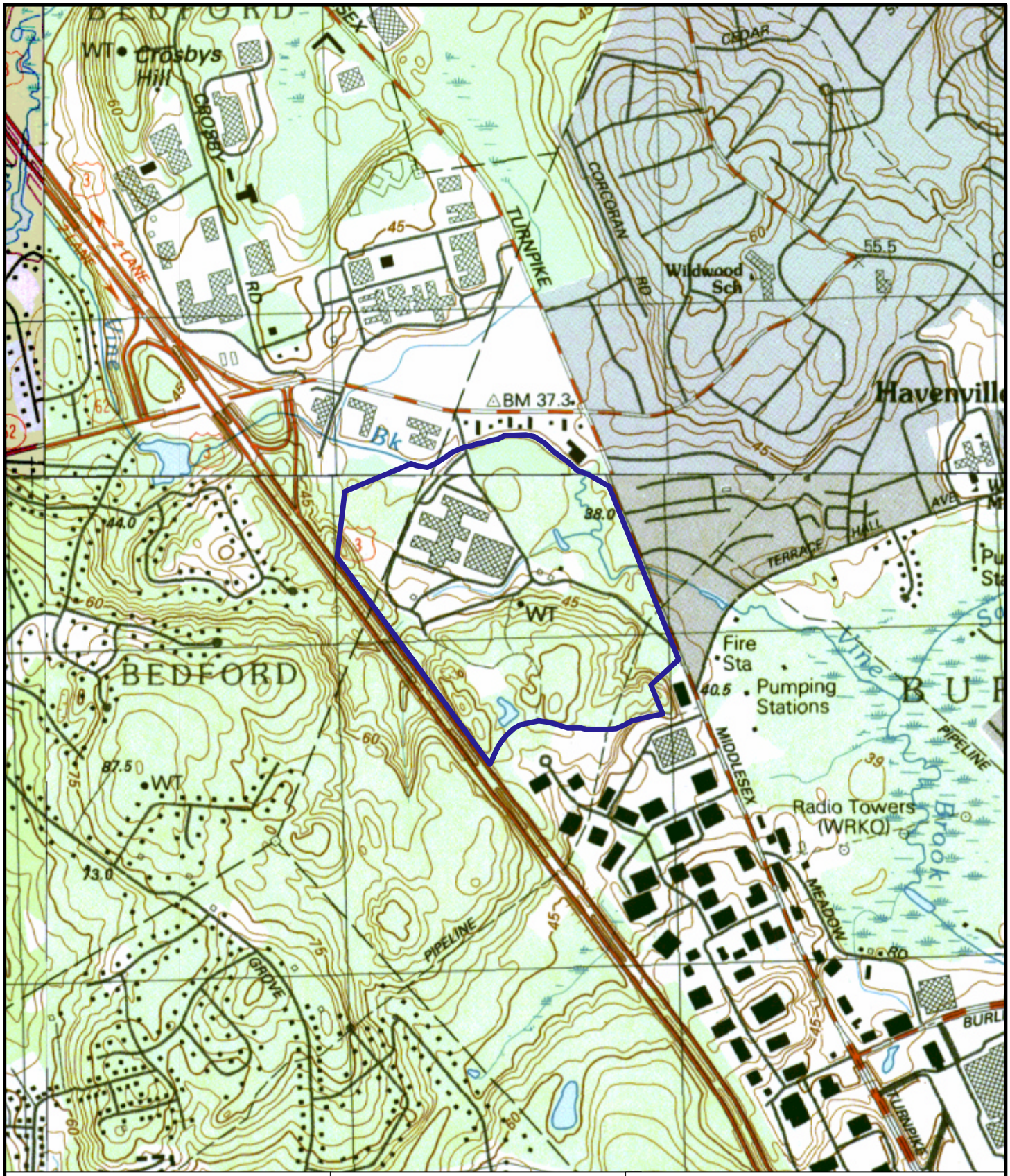
Notes:
< Less than method detection limit. Concentration reported is the detection limit.
J = Estimated concentration, according to data validation protocol.
ug/l = micrograms per liter or parts per billion (ppb).

Table 4-1

Comparison of EMW-7 Groundwater Concentrations to GW-2 Standards
Phase V Monitoring Report and ROS Statement
Former RCA Facility
Burlington, MA

Chemical	Concentration (ug/L)	GW-2 Standard (ug/L)
1,1-Dichloroethane	1.3	9,000
cis-1,2-Dichloroethylene	2.2	30,000
1,1-Dichloroethylene	0.37 J	1
Methyl tert butyl ether	2.1	50,000
Tetrachloroethylene	1.5	3,000
1,1,1-Trichloroethane	0.58 J	4,000
Trichloroethylene	1.9	300
Trichlorofluoromethane	1.5 J	None

Notes:
Concentration is from November 2002 sampling (EMW-7)



LEGEND

Site Location

Source: Scanned USGS topographic quadrangle dated 1987 supplied by Massachusetts Executive Office of Envrionmental Affairs, MassGIS.

500 0 500 1000 Feet

Scale 1:15840 Drawn: 05/28/2002

N

Site Coordinates:
x = 222002 m
y = 916312 m
MA State Plane NAD 83 Meters

FIGURE 1-1
SITE LOCATION MAP
LOCKHEED MARTIN CORPORATION
1 NETWORK DRIVE
BURLINGTON, MA

Shaw

P:\smallprojects\808170\Figure 1-1.lay

LEGEND

- PROPERTY LINE
- BUILDING
- TREE LINE
- PAVED ROAD
- LIMITS OF SWAMP
- BODY OF WATER/STREAM
- EMW-1D — MONITORING WELL AND IDENTIFIER
- CVB-1▲ — SURFACE WATER SAMPLING LOCATION AND IDENTIFIER
- WELL-DEFINED CHLORINATED VOC PLUME/ GROUNDWATER (AREA/ MEDIA SUBJECT TO ROS SUBMITTAL)

0 300 600

SCALE IN FEET

NOTE:

BASE MAP SOURCES: VANASSE HANGEN BRUSTIN, INC., MAP, DRAWING #C-3, SHEET 3 OF 11 PROJECT #06830, 1/18/00, AND EMCON DRAWING #1, PROJECT #86075-001.000, 1/10/97.

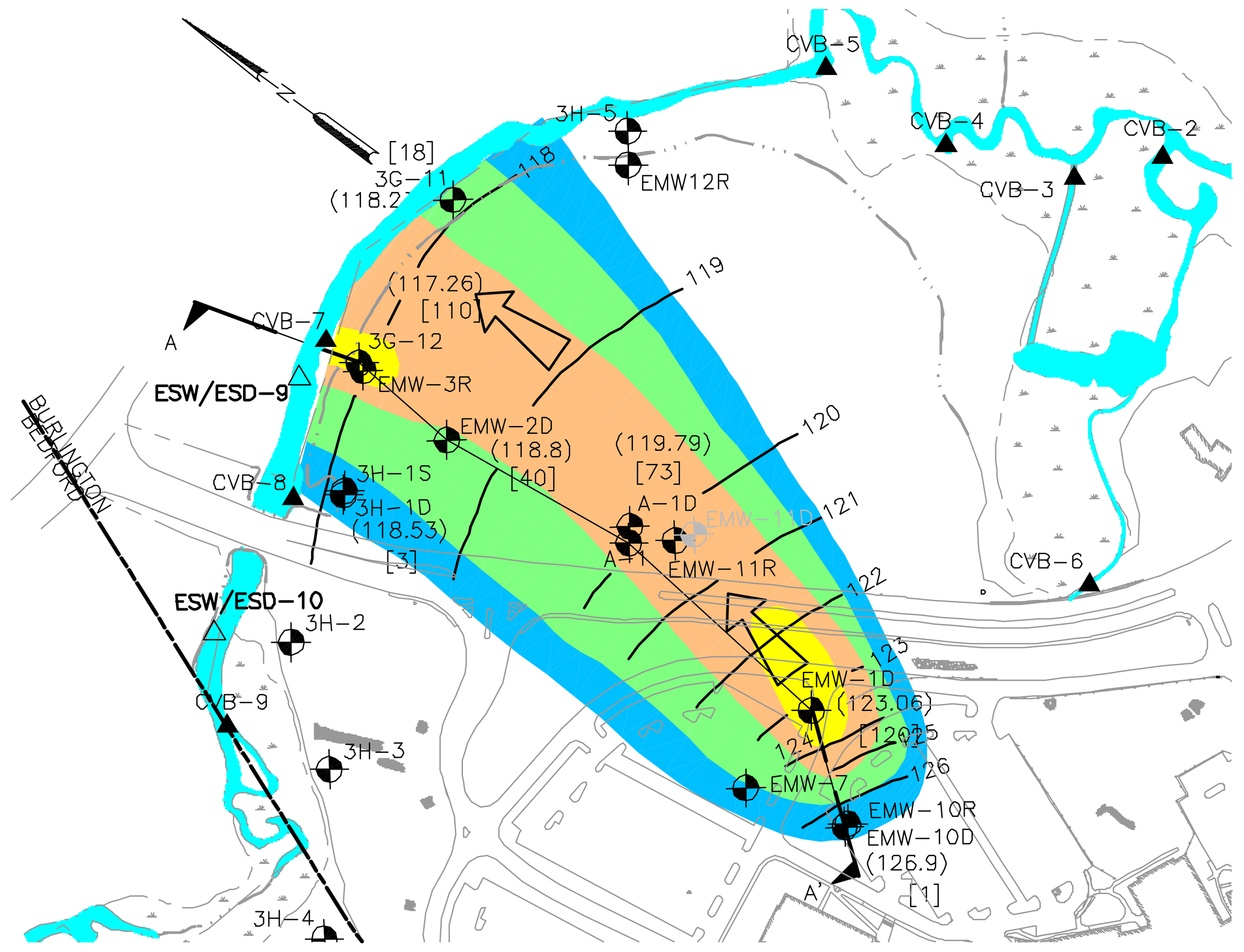
Shaw™
Shaw E & I, Inc.

DATE 1/28/03
DWN J.O'D.
APP
REV
PROJECT NO. 830835

FIGURE 1-2
LOCKHEED MARTIN CORP.
1 NETWORK DRIVE
BURLINGTON, MASSACHUSETTS
SITE PLAN WITH PHASE V SAMPLING LOCATIONS

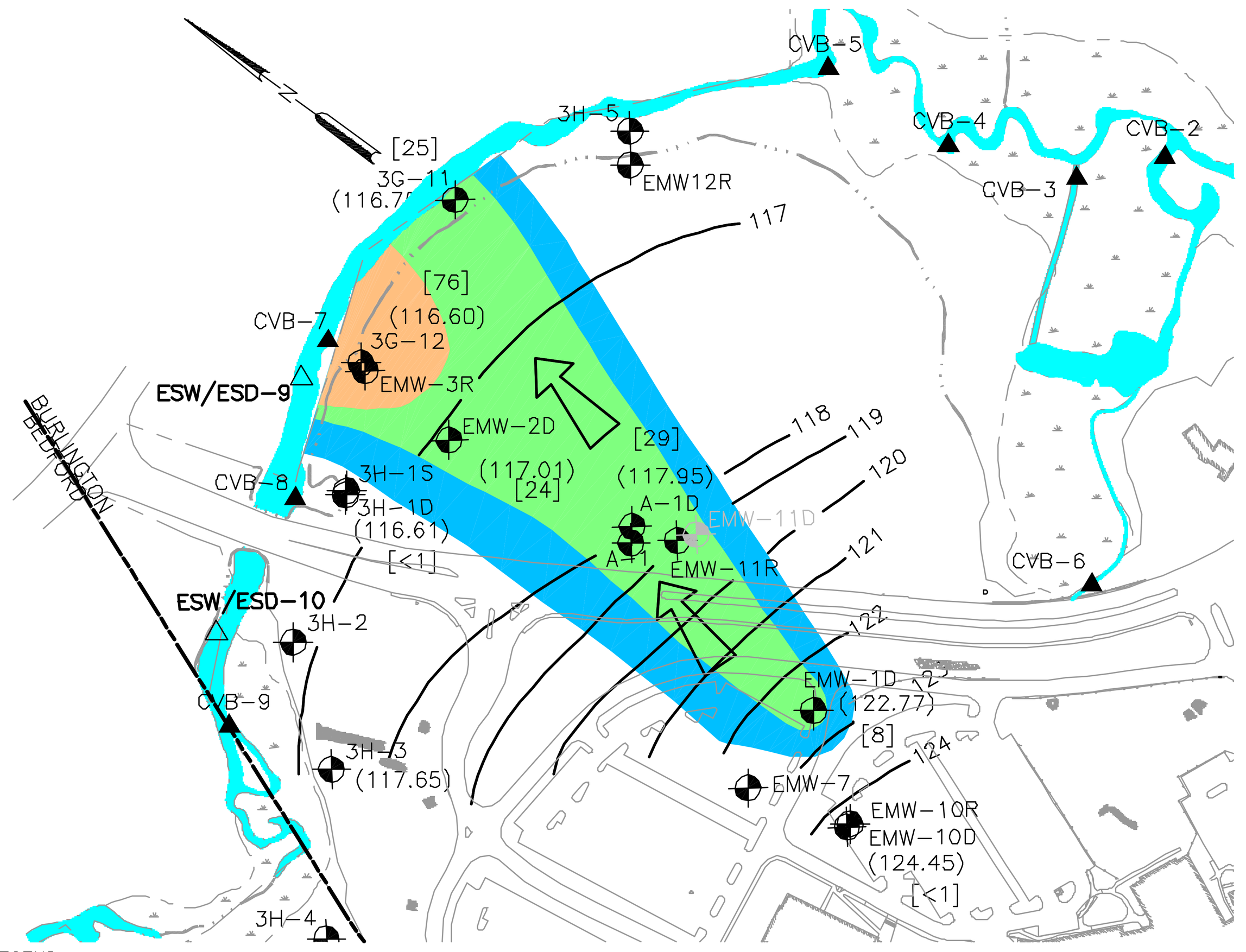
XREF Files: anlmmw01 anlmb-03 anlmb-02 Anlmbd01 anlmxr04 IMAGE Files:
File: N:\dwg\830835\11\Anlmf-02.dwg Layout: sample plan User: jodonnell Mar 10, 2003 - 4:03pm

1" 1/2" 0" 1"

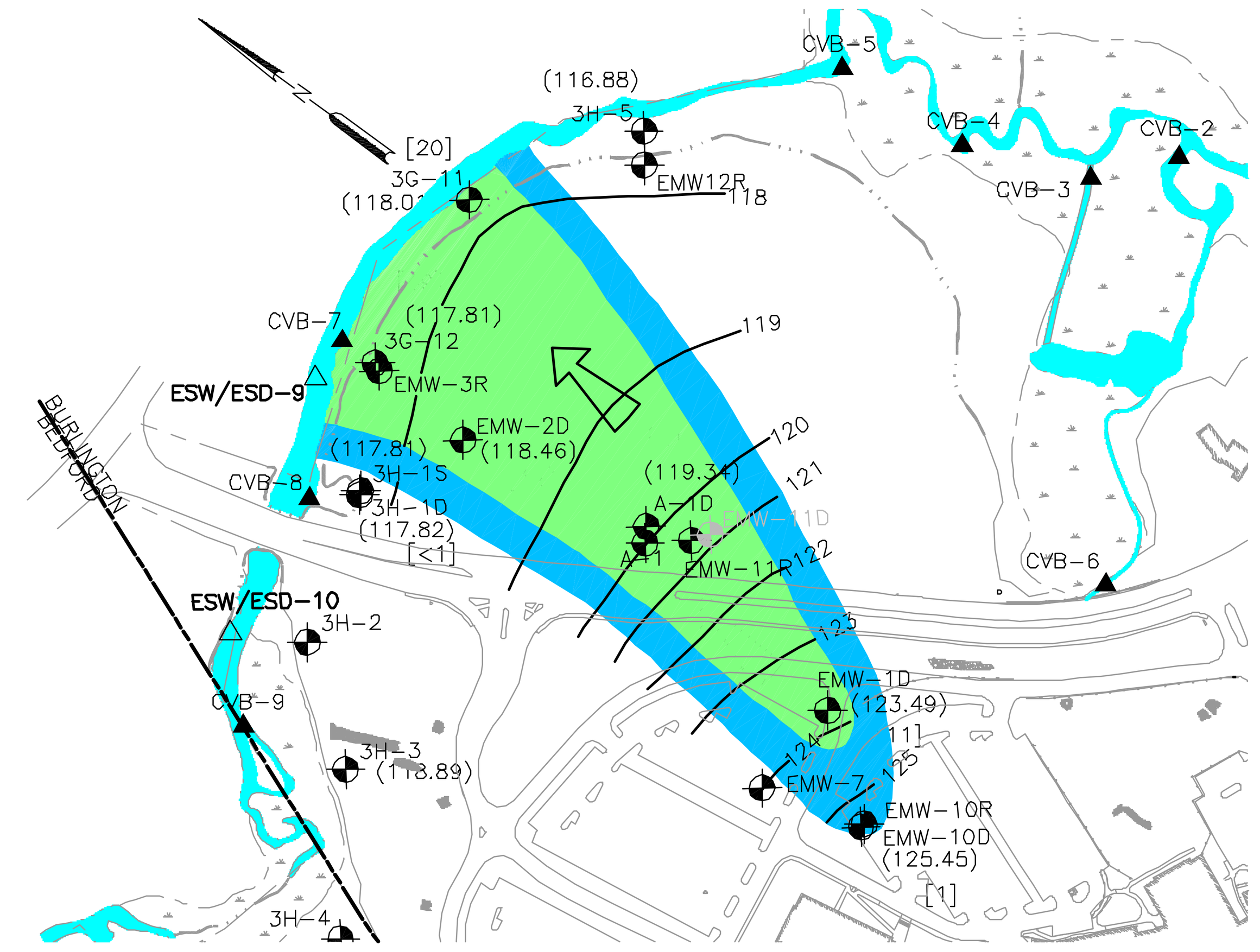


1,1-DCE MAY 1998

1,1-DCE MAY 1999



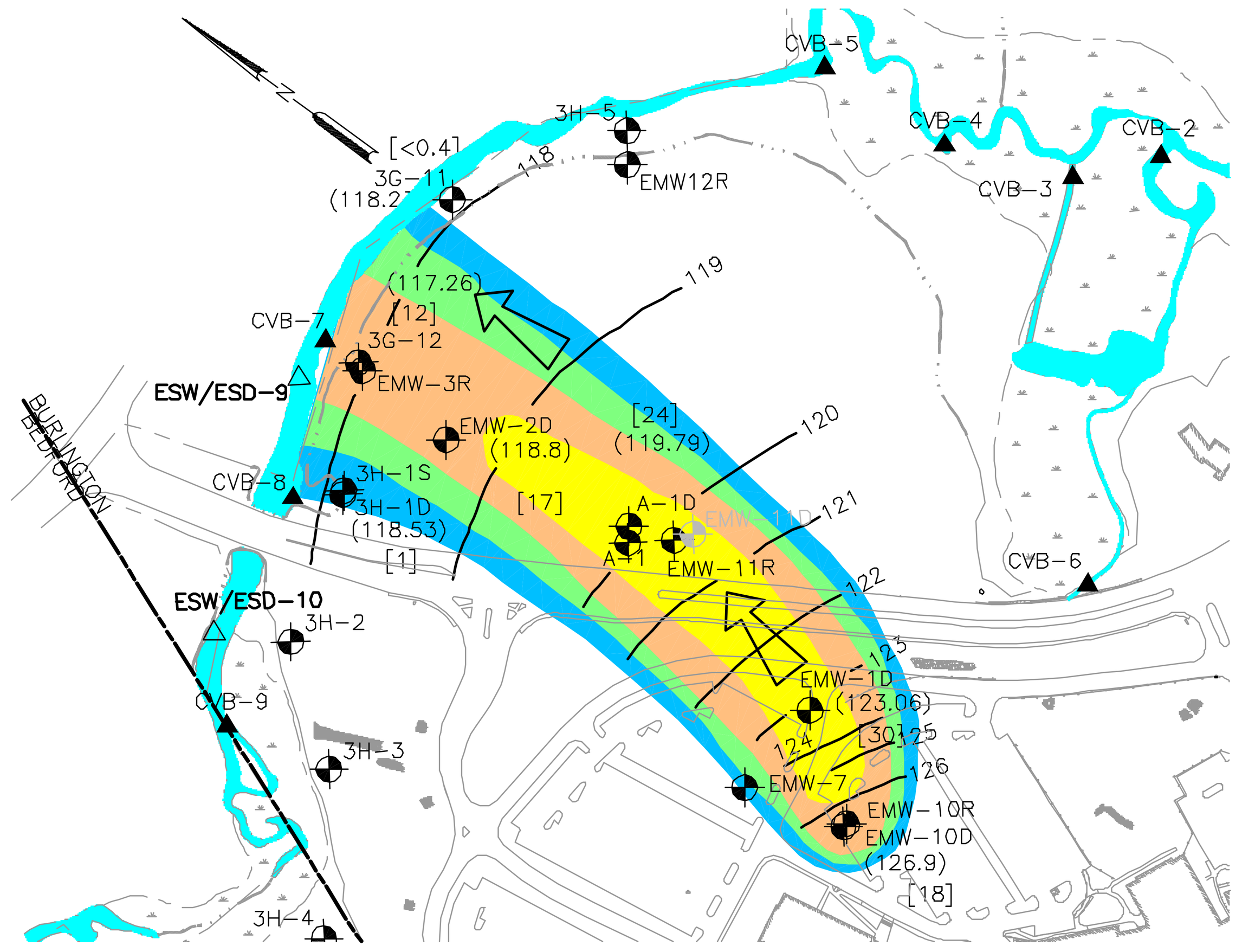
1,1-DCE FEB 2001



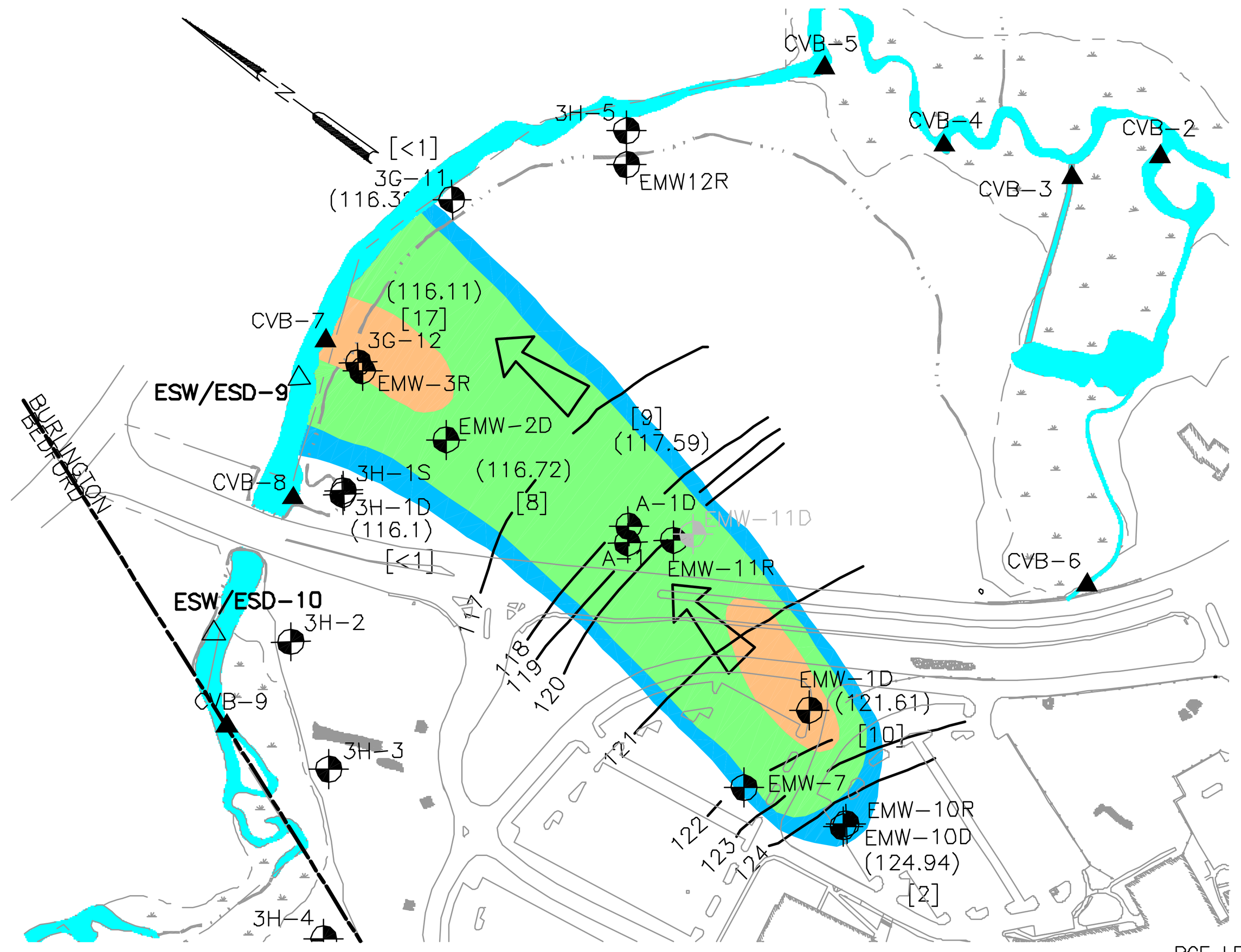
1,1-DCE NOV 2002

1,1-DCE LEGEND

[2]	ug/L
(blue)	0–7 ug/L
(green)	7–49 ug/L
(orange)	50–99 ug/L
(yellow)	>100 ug/L



PCE MAY 1998



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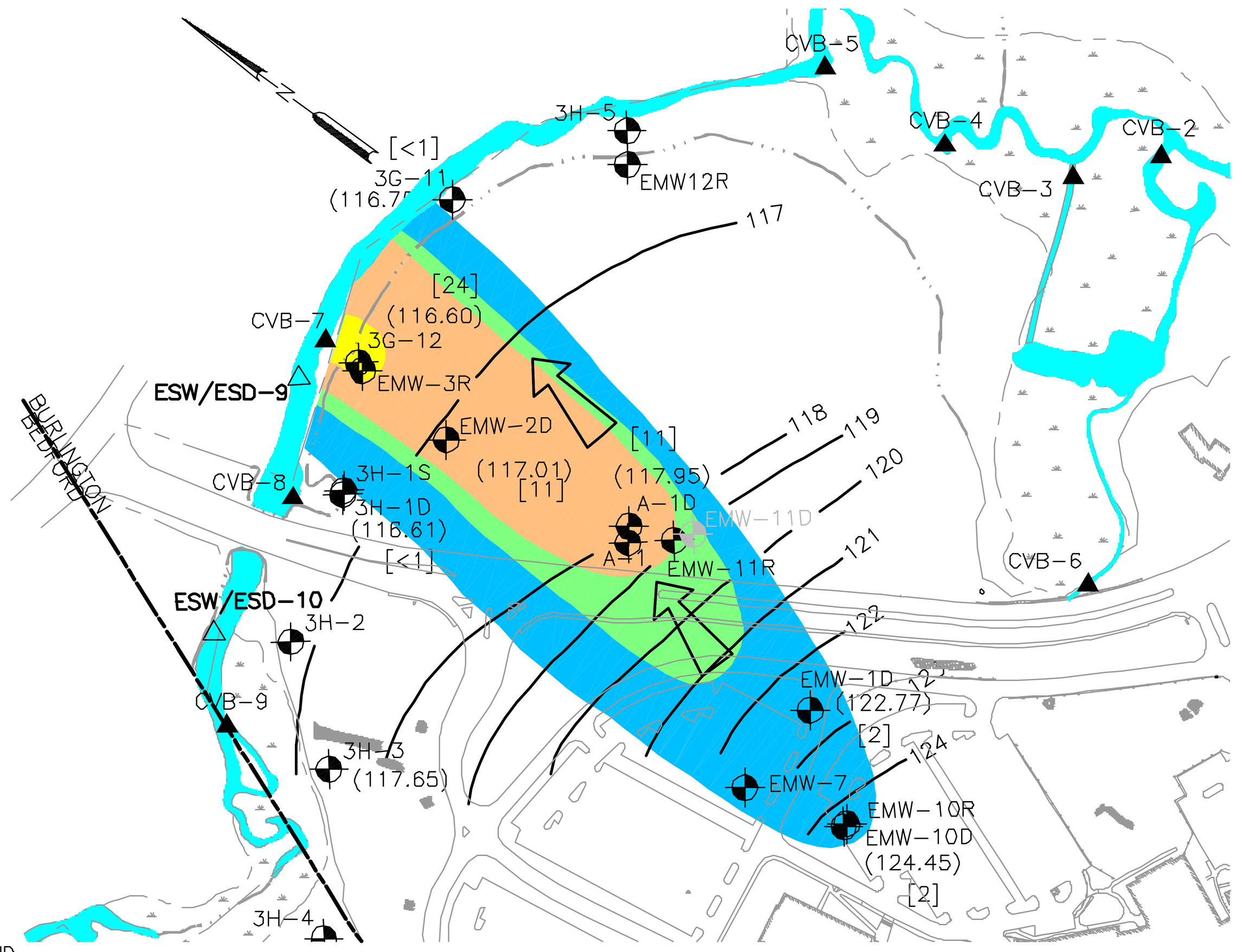
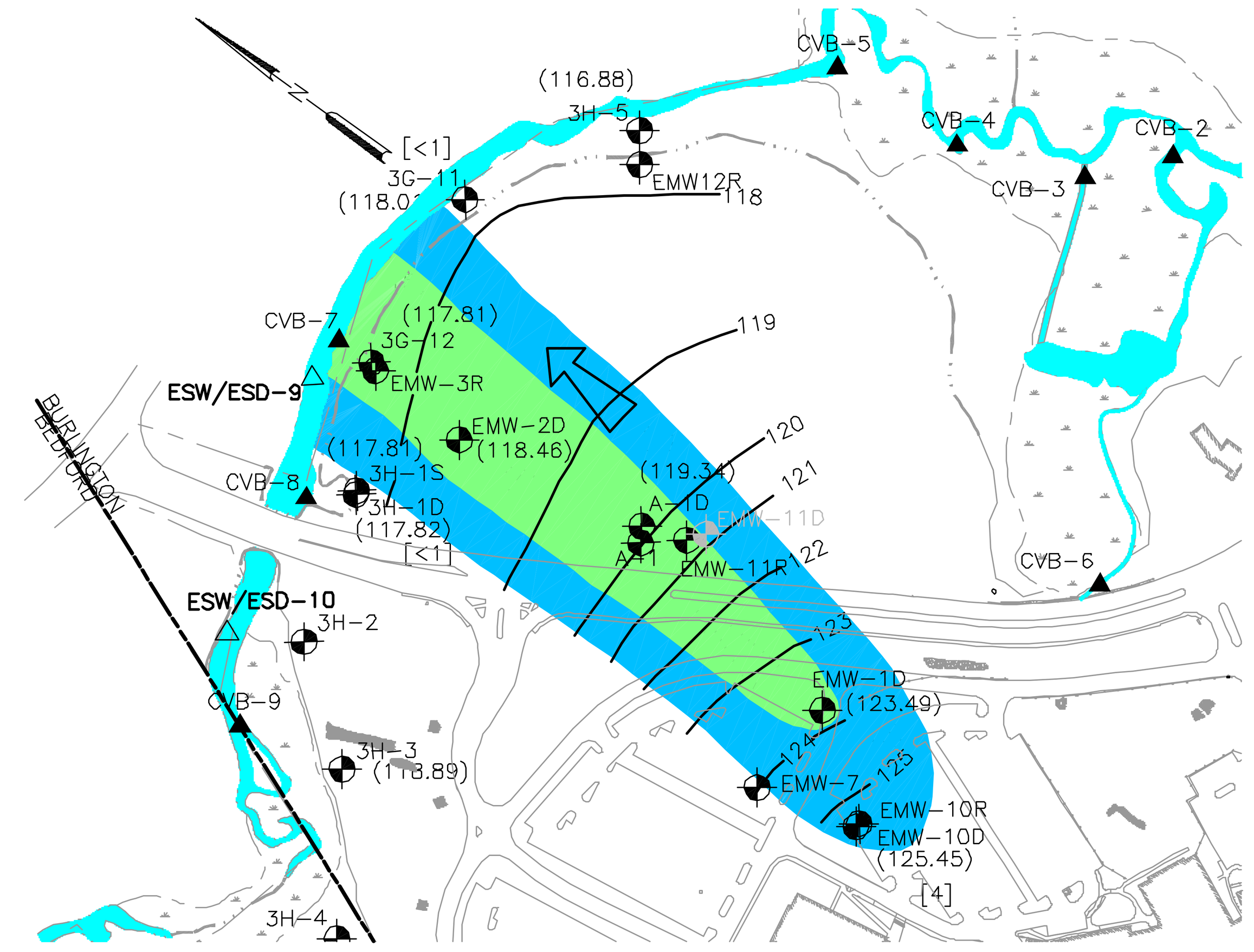


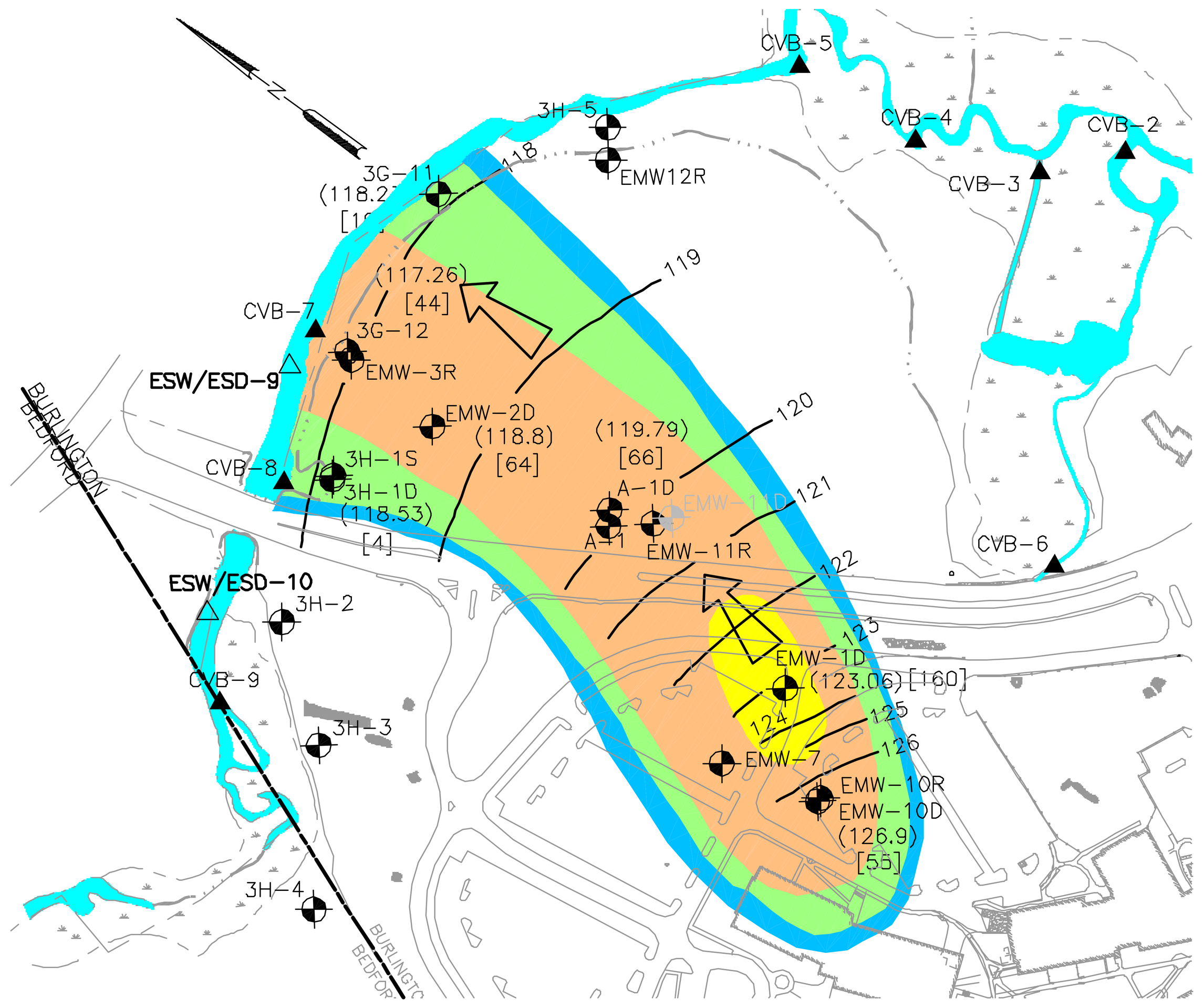
PCE FEB 2001



PCE NOV 2002

PCE LEGEND

[2]	ug/L
(blue)	0–5 ug/L
(green)	5–9 ug/L
(orange)	10–19 ug/L
(yellow)	>20 ug/L



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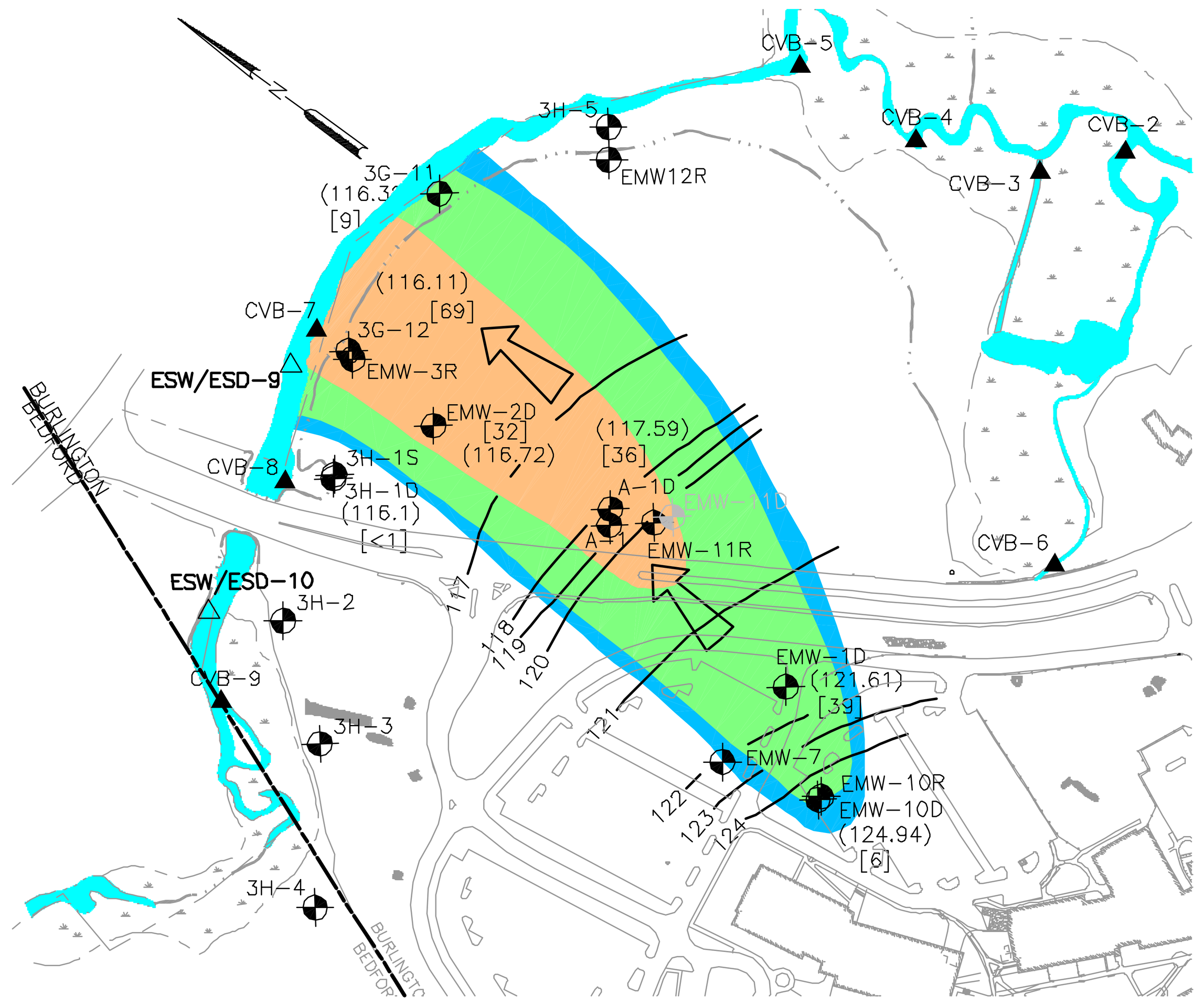

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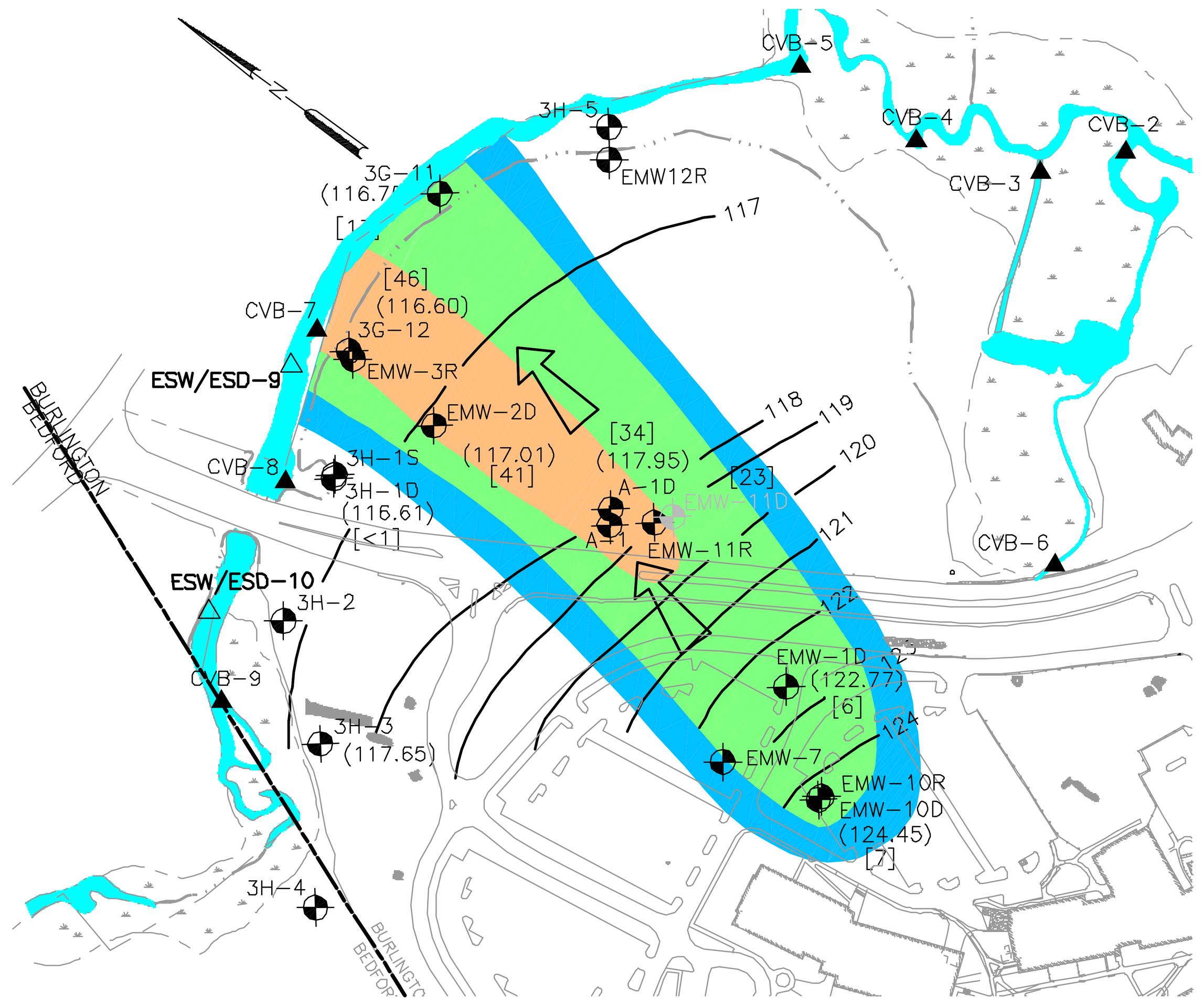

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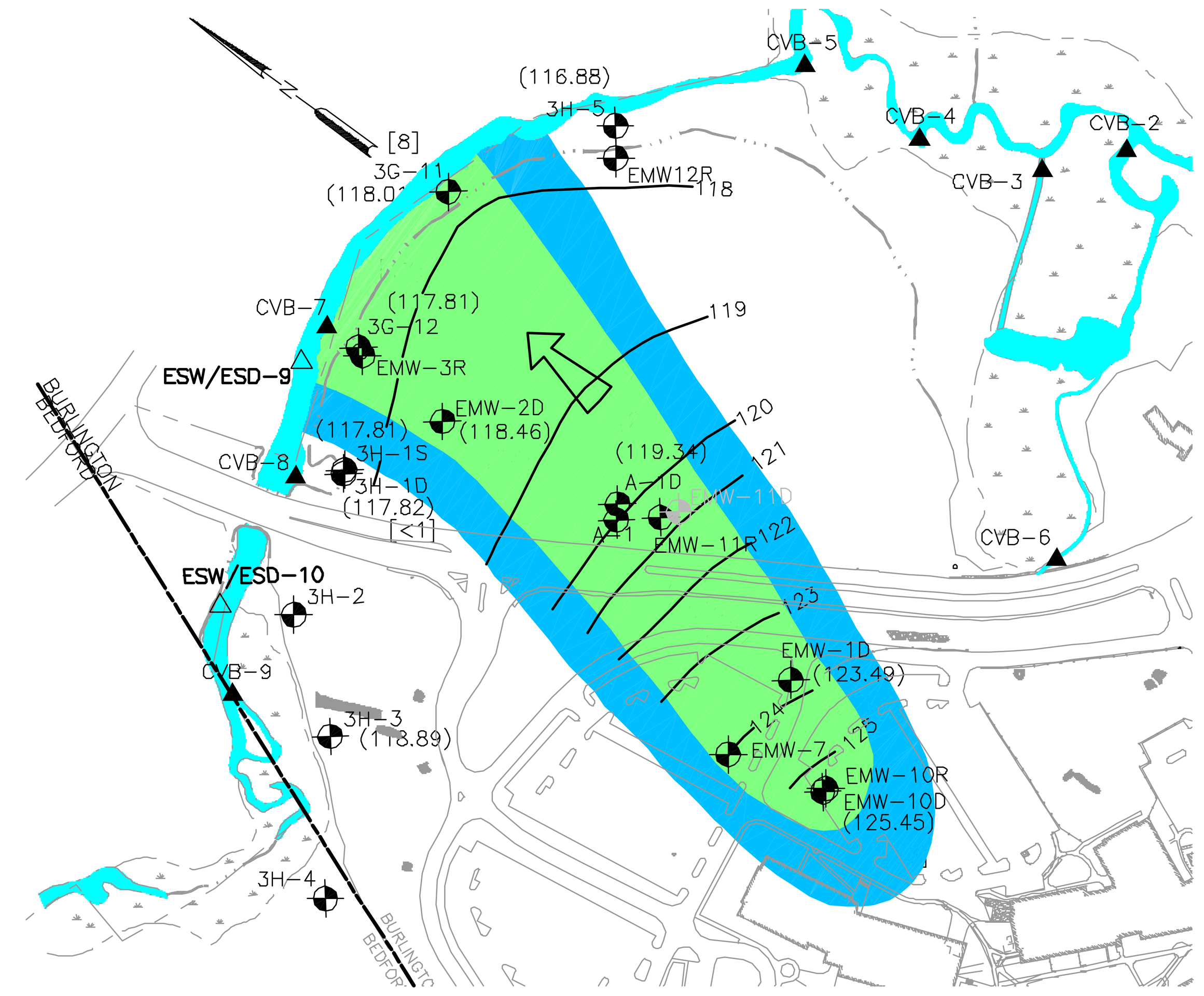


TCE NOV 2002

TCE LEGEND

[2]	ug/L
(blue)	0–5 ug/L
(green)	5–29 ug/L
(orange)	30–99 ug/L
(yellow)	>100 ug/L

LEGEND

A — — — A'	LOCATION OF CROSS–SECTIONS SHOWN IN FIGURE 3–2
⇨	GROUNDWATER FLOW DIRECTION
(119.34)	WATER TABLE ELEVATION (FT)
———	WATER TABLE ELEVATION CONTOUR

NOT TO SCALE

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE 2/11/02 DWN BY J.O'D. DES BY CHK BY APP BY

Shaw Environmental & Infrastructure, Inc.

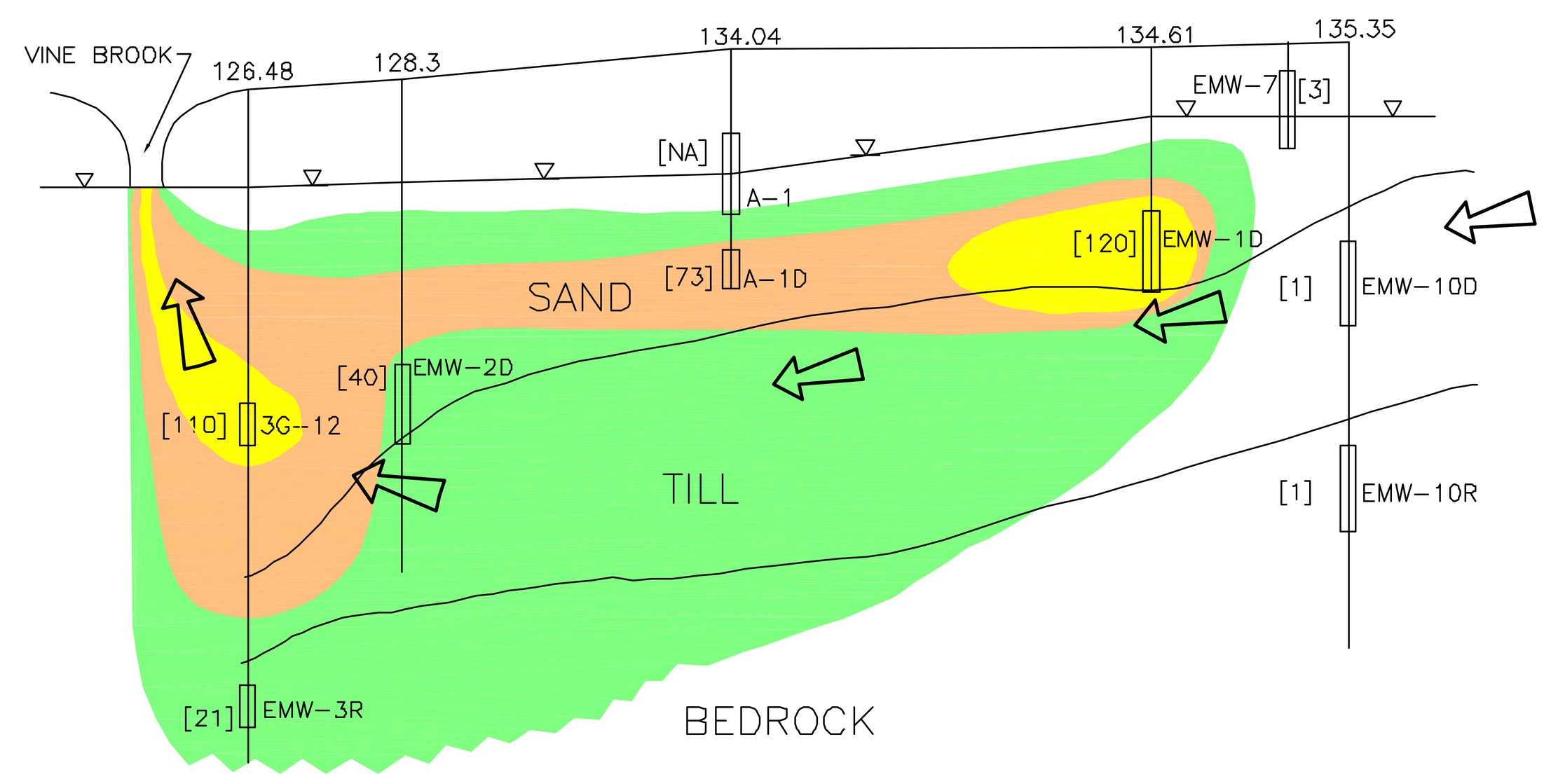
LOCKHEED MARTIN CORPORATION

BURLINGTON, MASSACHUSETTS

PLUME MAPS

DRAWING NO. 3-1

PROJECT NO. 830835



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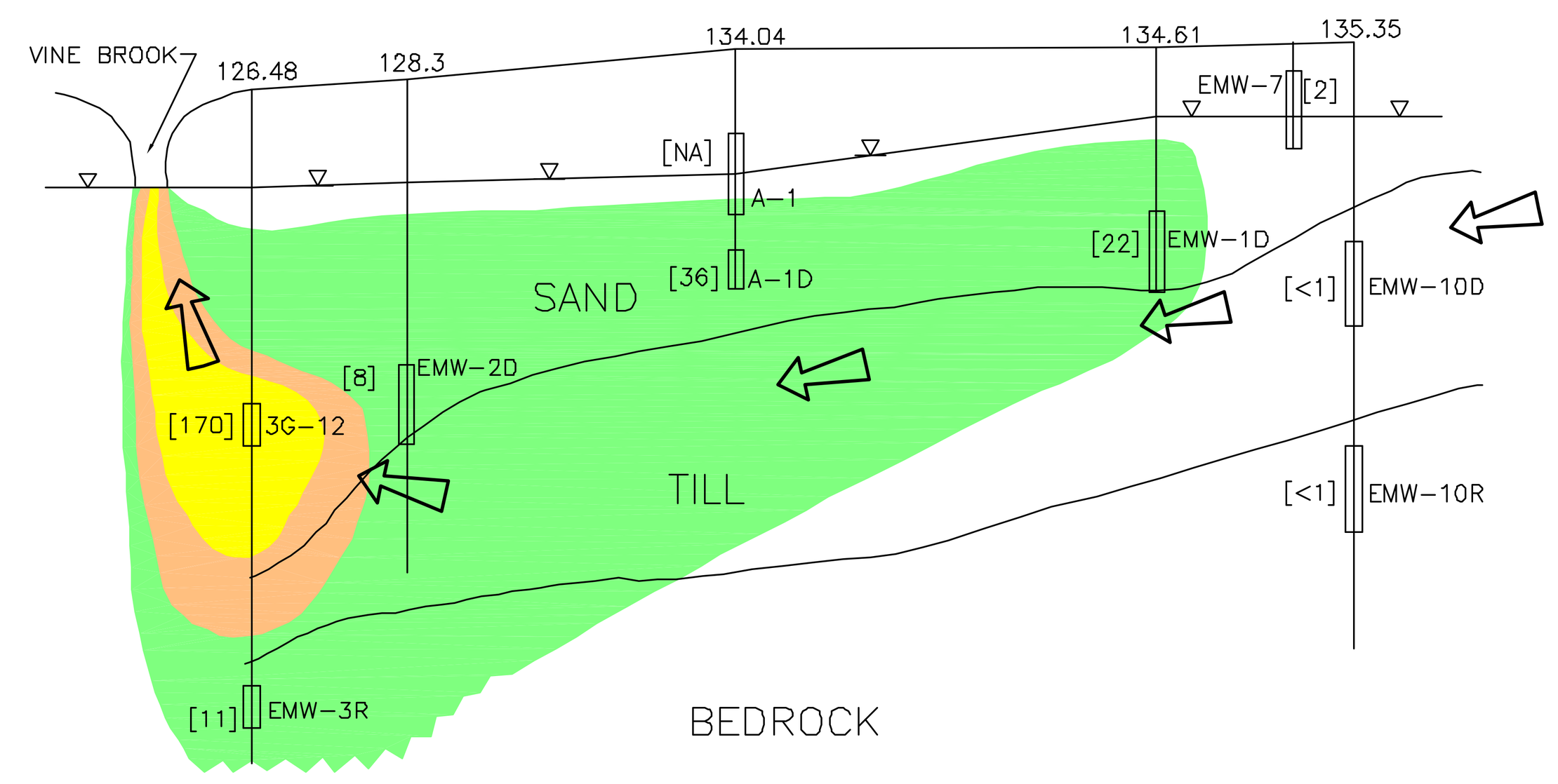

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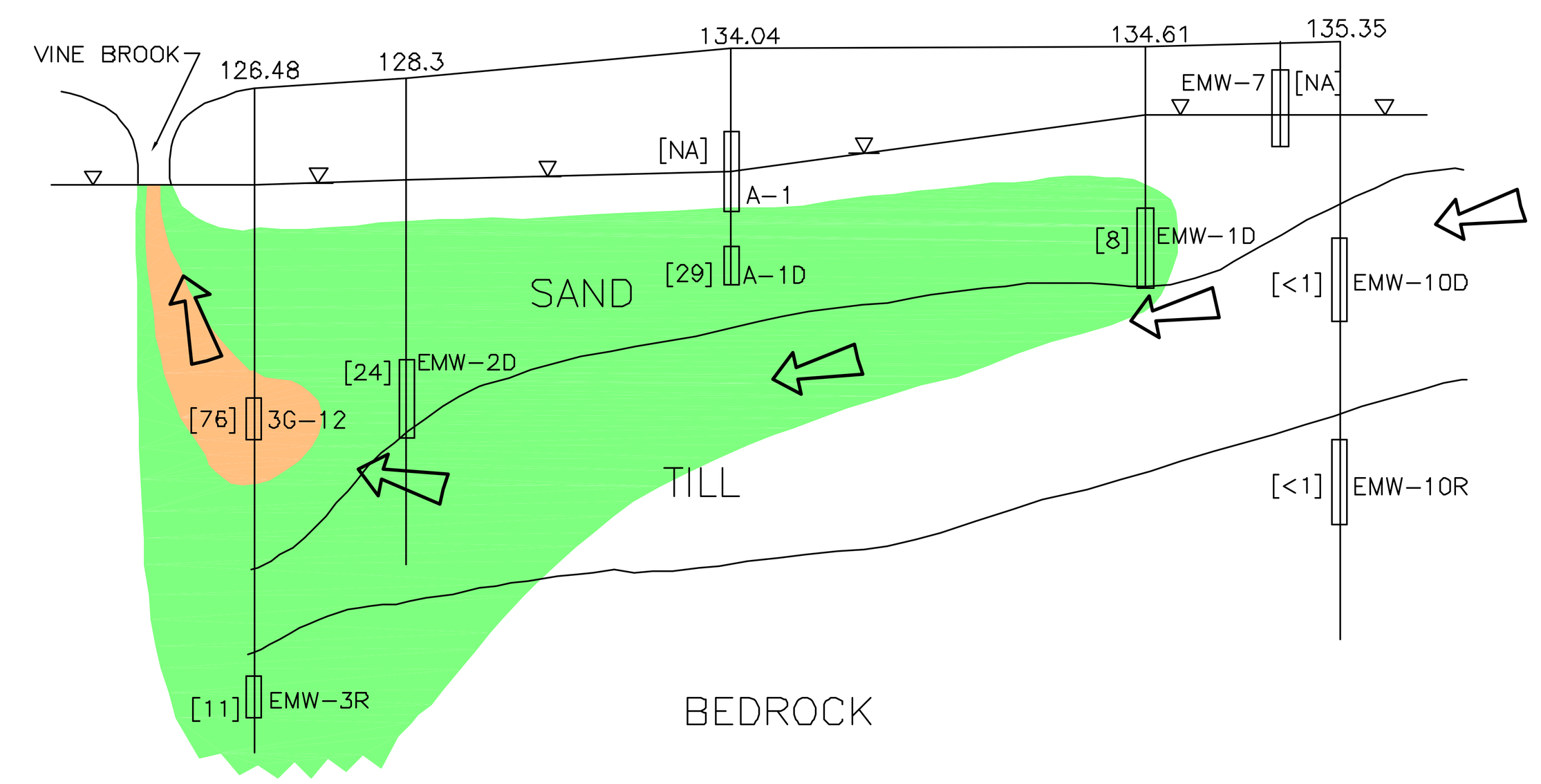


DCE LEGEND

[2] ug/L

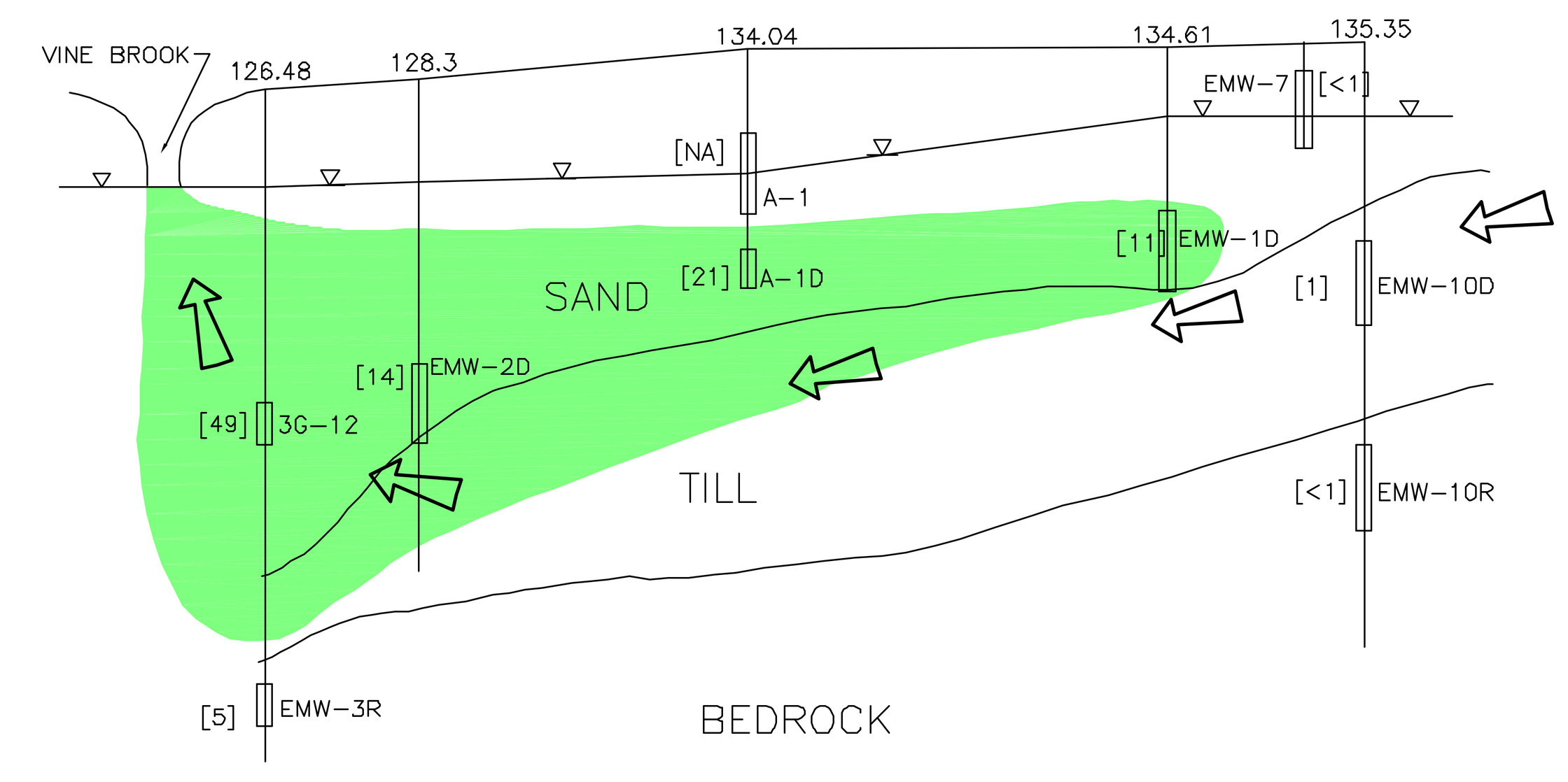
[NA] NOT ANALYZED

7–49 ug/L

50–99 ug/L

>100 ug/L

1,1-DCE FEB 2001



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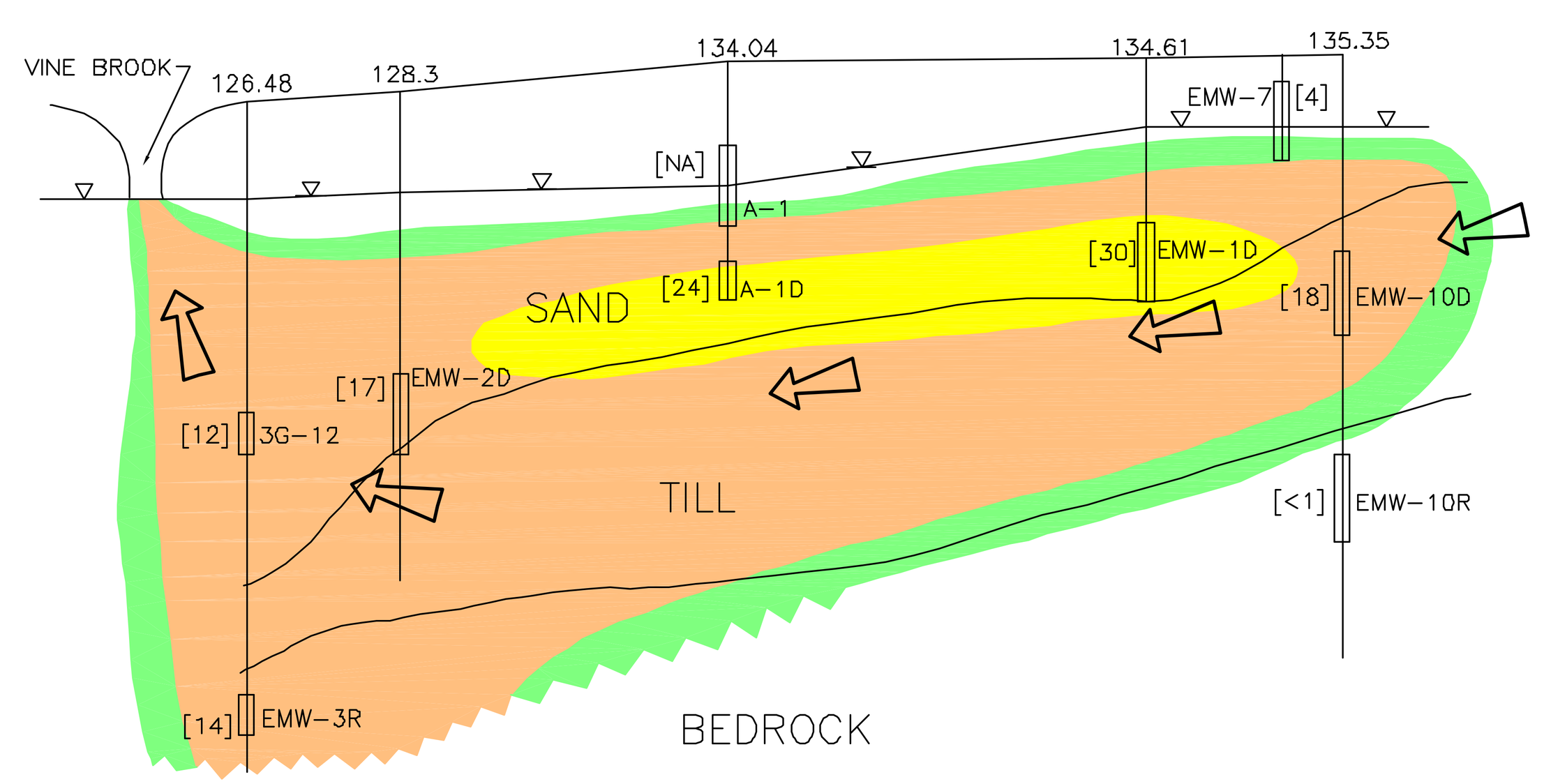

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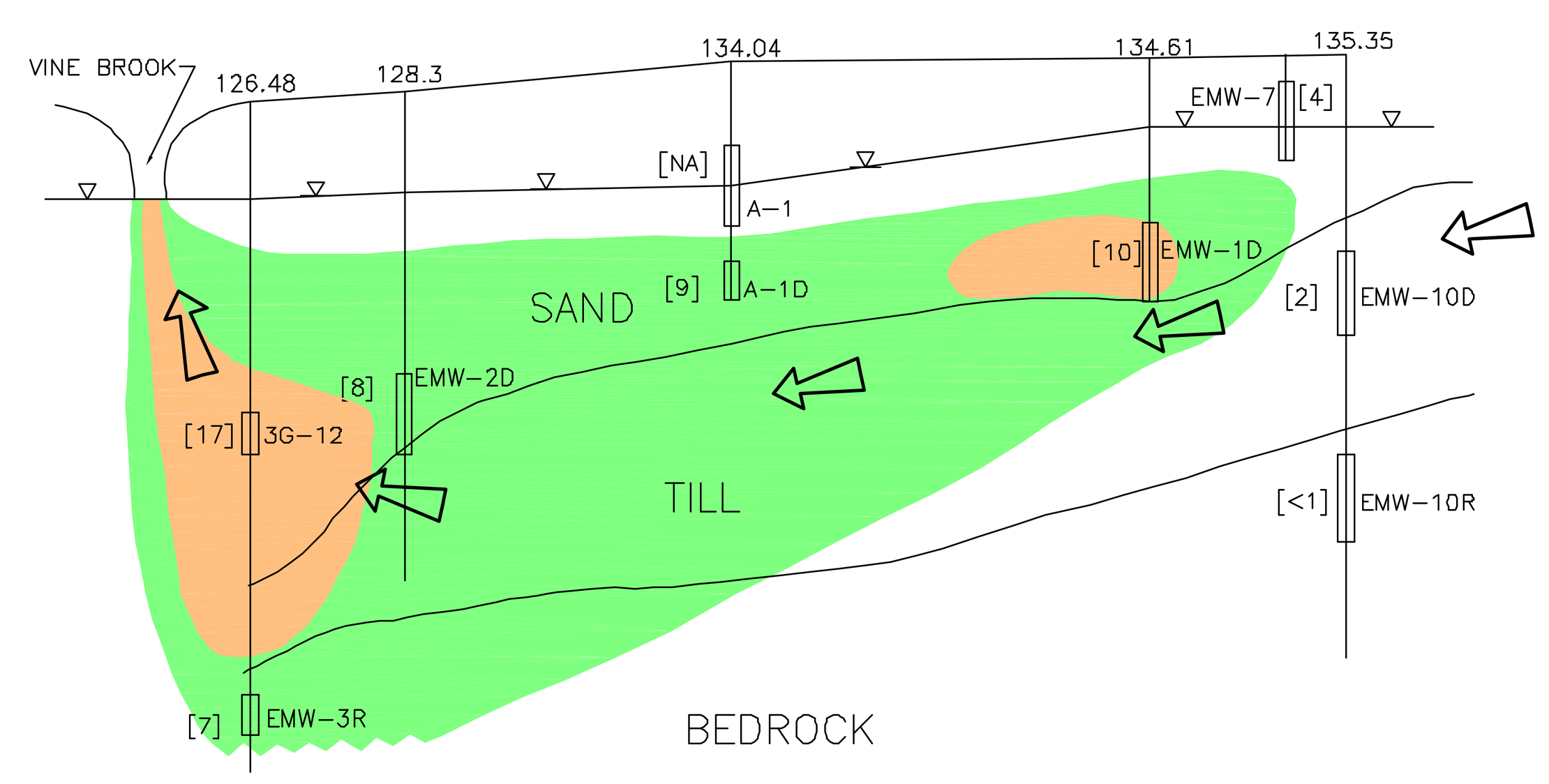

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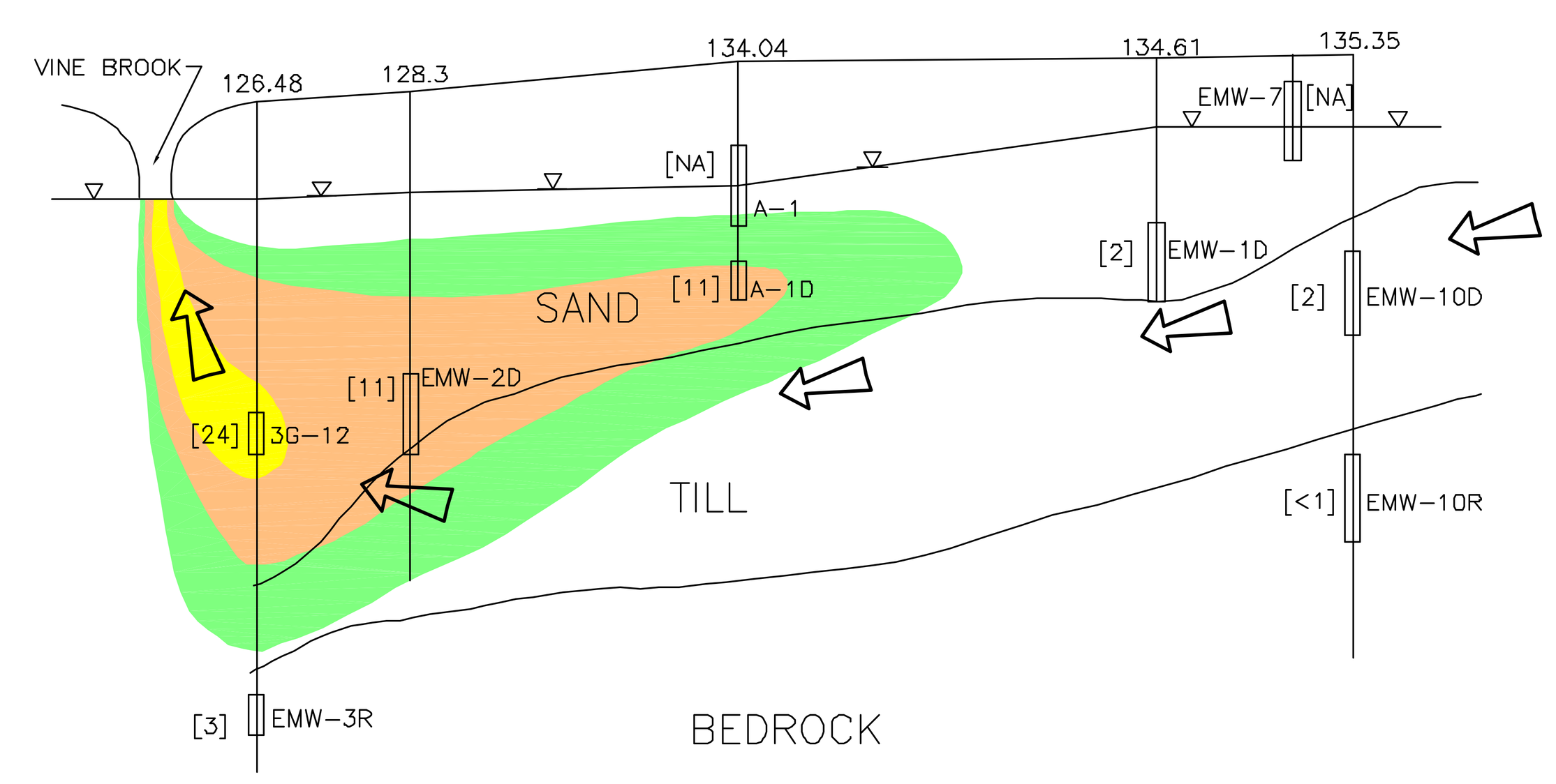


PCE LEGEND

[2] ug/L

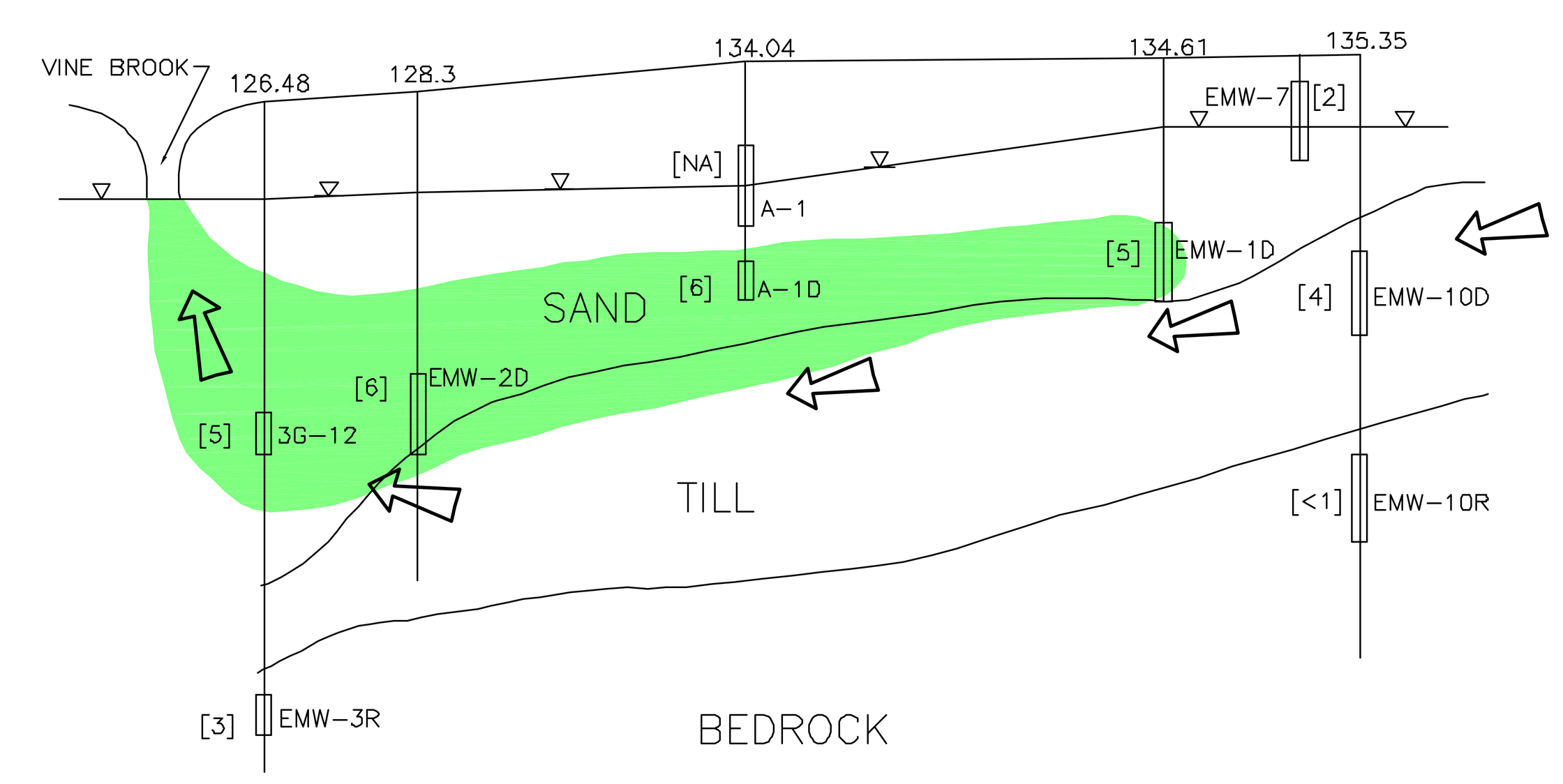
[NA] NOT ANALYZED

5–9 ug/L

10–19 ug/L

>20 ug/L

PCE FEB 2001



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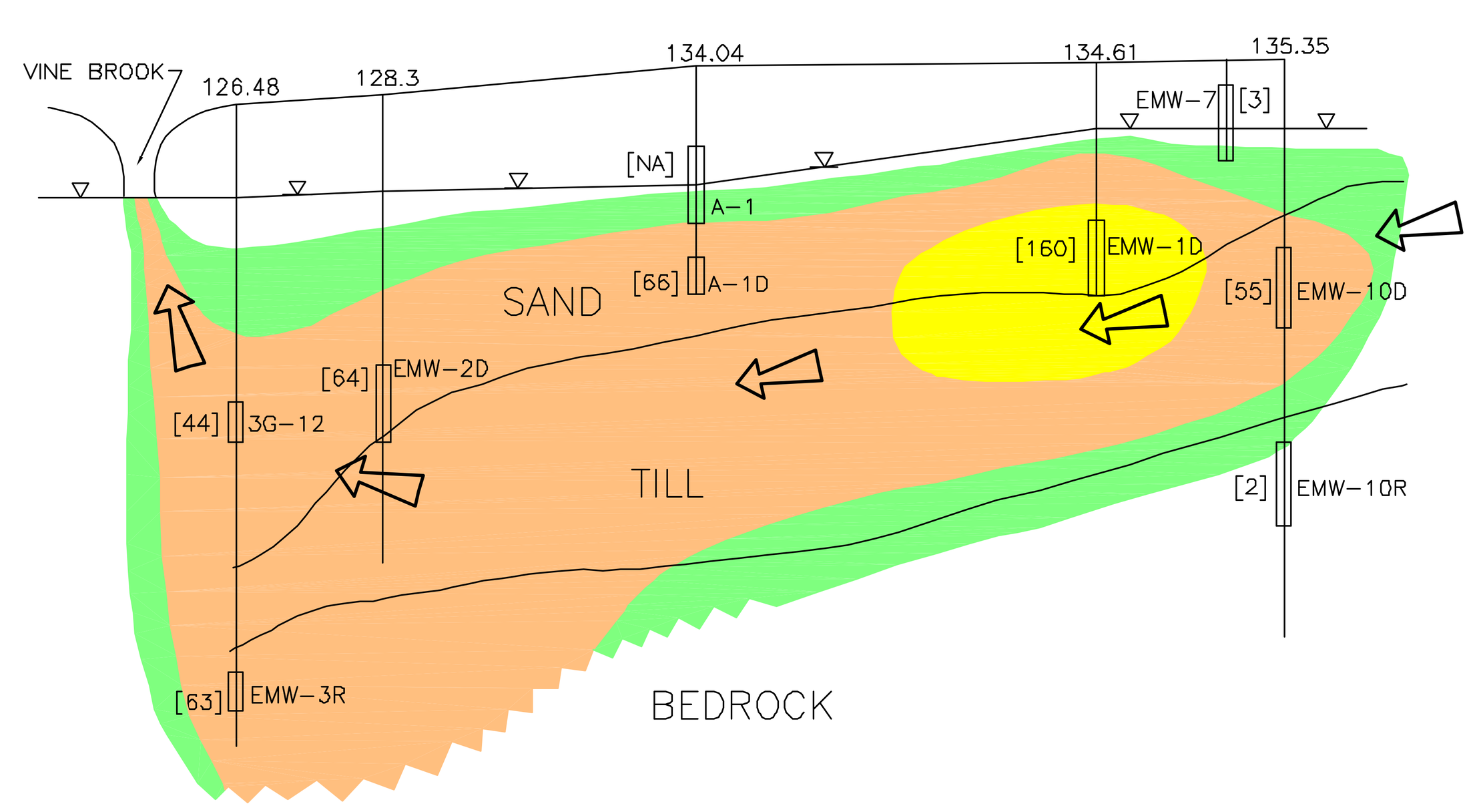

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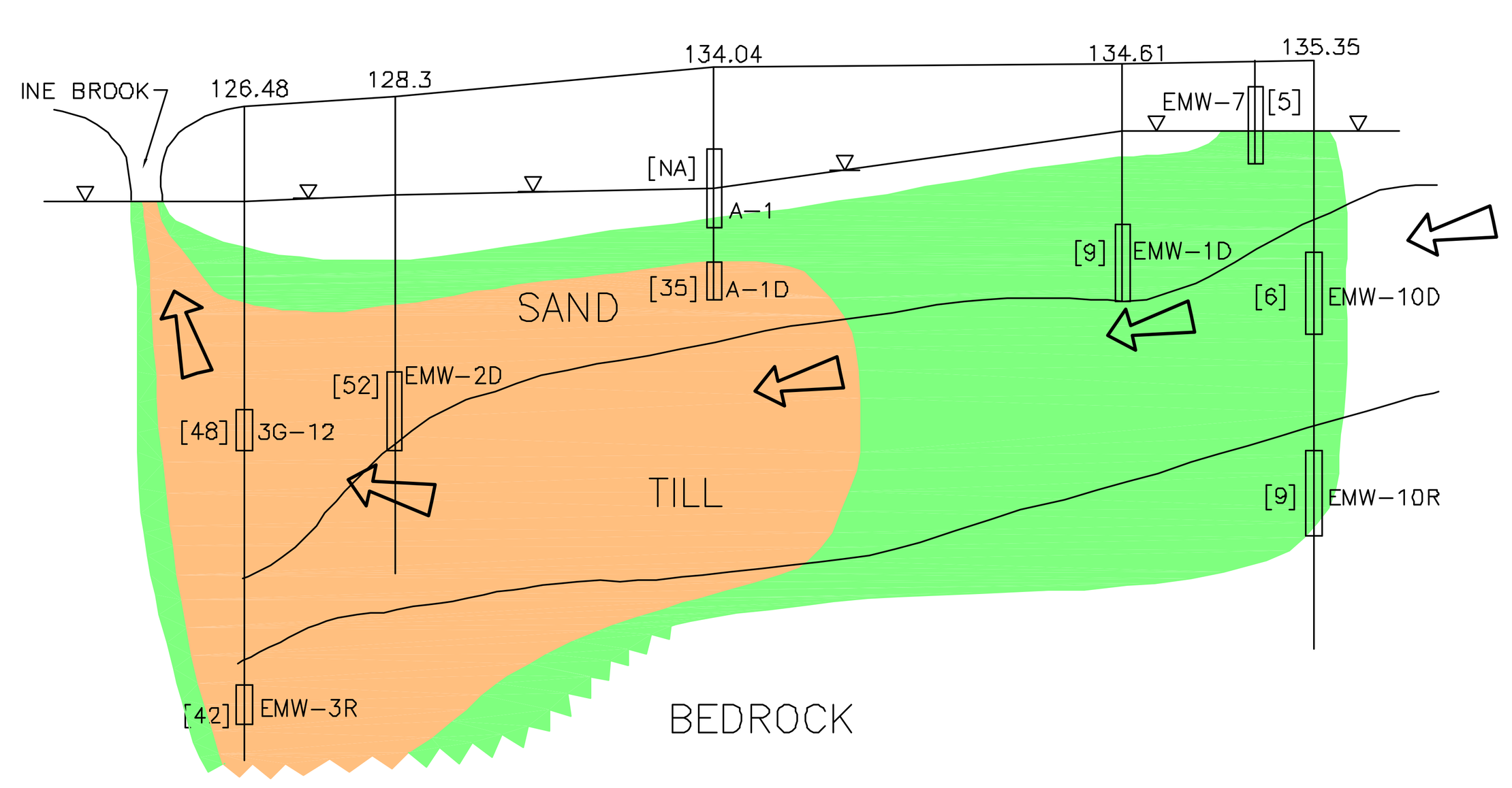

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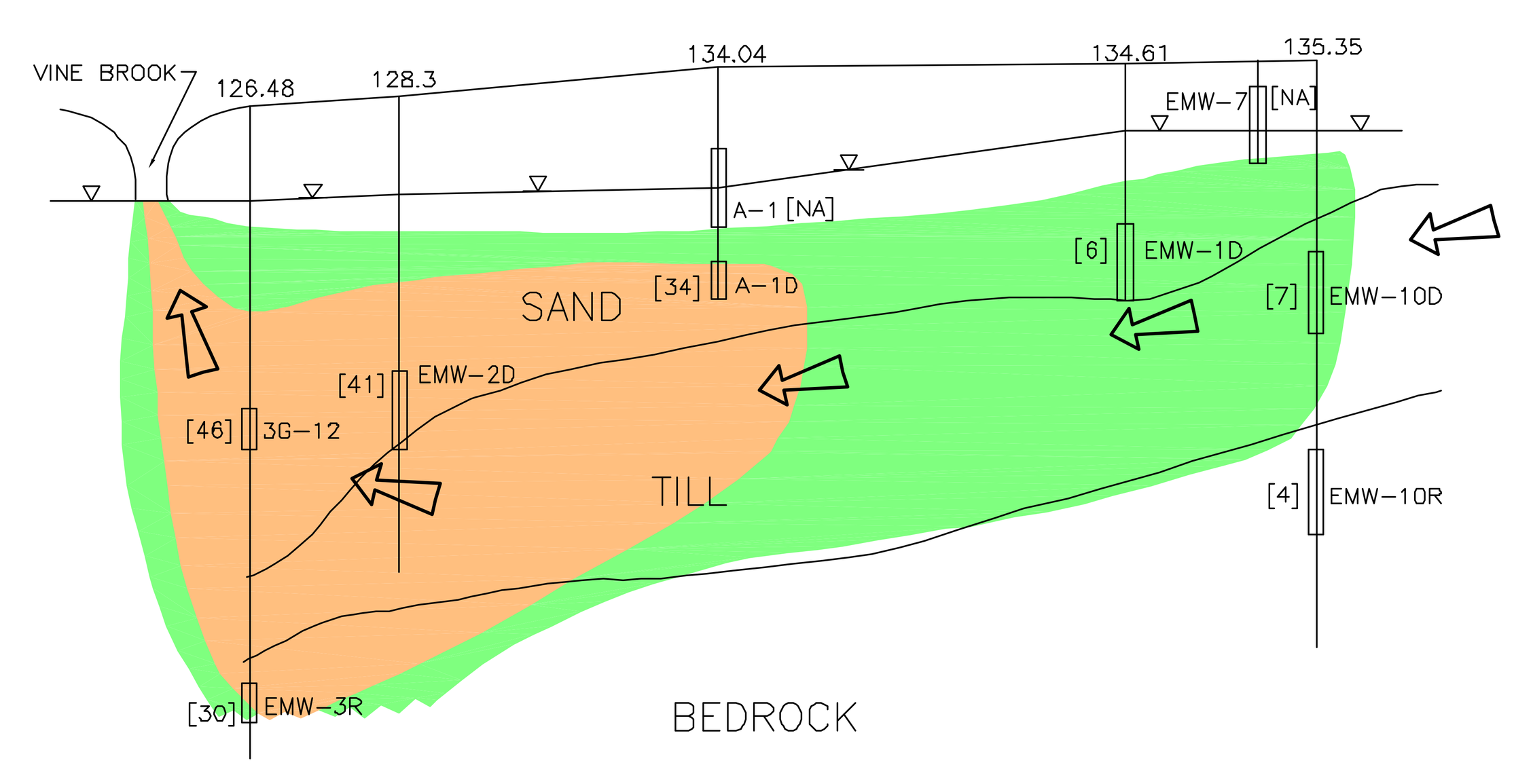


TCE LEGEND

[2] ug/L

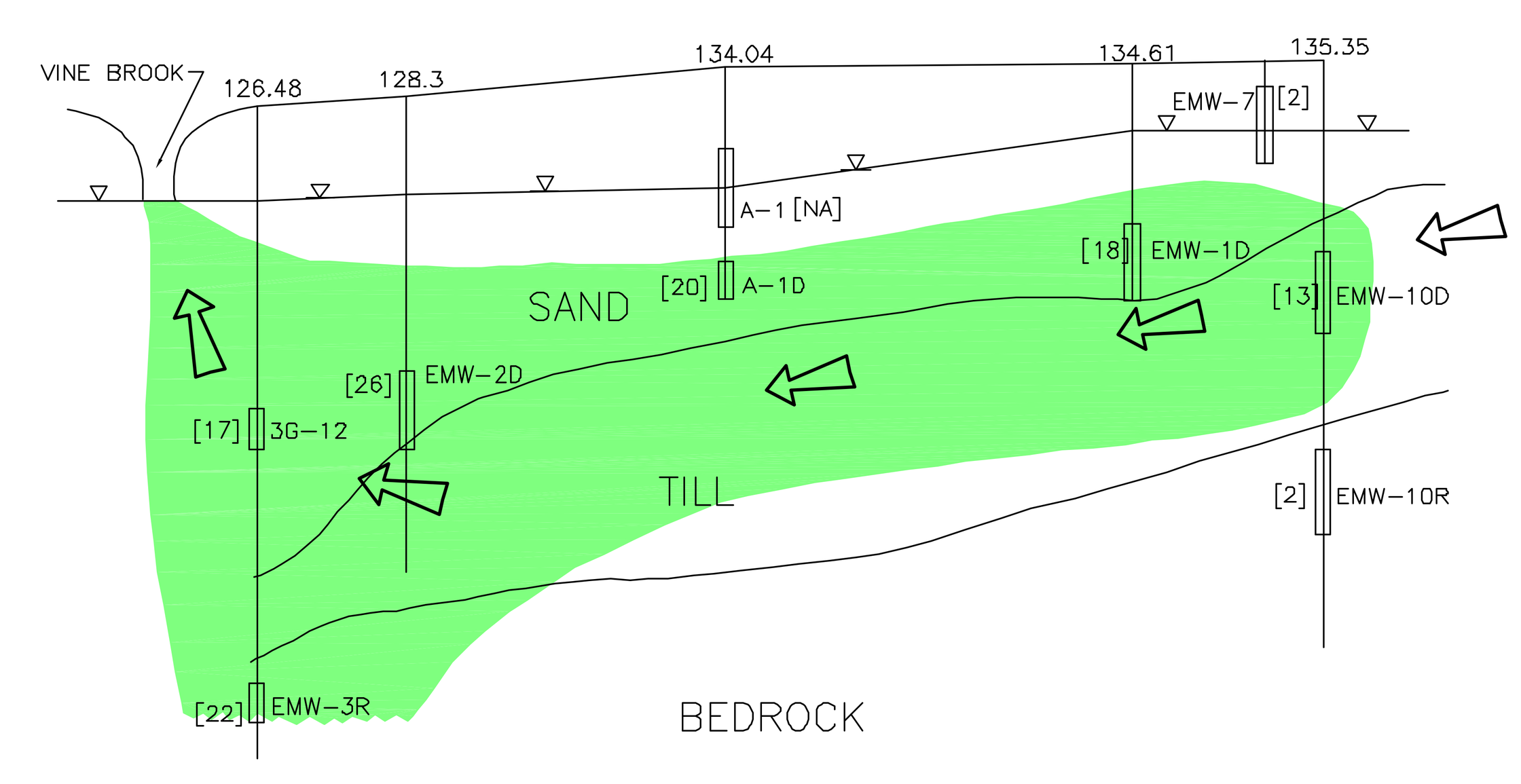
[NA] NOT ANALYZED

5–29 ug/L

30–99 ug/L

>100 ug/L

TCE FEB 2001



TCE NOV 2002

0 200 400
HORIZONTAL SCALE IN FEET

0 20 40
VERTICAL SCALE IN FEET

GROUNDWATER FLOW DIRECTION

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE 2/11/03 DWN BY J.O'D. DES BY CHK BY APP BY D.W.

Shaw Environmental & Infrastructure, Inc.

LOCKHEED MARTIN CORPORATION

BURLINGTON, MASSACHUSETTS

PLUME CROSS SECTIONS

DRAWING NO. **3-2**

PROJECT NO. 830835

Massachusetts Department of Environmental Protection **BWSC-108**

Bureau of Waste Site Cleanup

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number: 3 - 265

A. SITE LOCATION:

Site Name: (optional) Former RCA Facility

Street: 1 Network Drive (formerly 183 Bedford St.) Location Aid:

City/Town: Burlington ZIP Code: 01803-0000

Related Release Tracking Numbers that this Form Addresses:

Tier Classification: (check one of the following) ☐ Tier IA ☑ Tier IB ☐ Tier IC ☐ Tier II ☐ Not Tier Classified

If a Tier I Permit has been issued, state the Permit Number: 102258

B. THIS FORM IS BEING USED TO: (check all that apply)

☐ Submit a **Phase I Completion Statement**, pursuant to 310 CMR 40.0484 (complete Sections A, B, C, G, H, I and J).

☐ Submit a **Phase II Scope of Work**, pursuant to 310 CMR 40.0834 (complete Sections A, B, C, G, H, I and J).

☐ Submit a final **Phase II Comprehensive Site Report and Completion Statement**, pursuant to 310 CMR 40.0836 (complete Sections A, B, C, D, G, H, I and J).

☐ Submit a **Phase III Remedial Action Plan and Completion Statement**, pursuant to 310 CMR 40.0862 (complete Sections A, B, C, G, H, I and J).

☐ Submit a **Phase IV Remedy Implementation Plan**, pursuant to 310 CMR 40.0874 (complete Sections A, B, C, G, H, I and J).

☐ Submit an **As-Built Construction Report**, pursuant to 310 CMR 40.0875 (complete Sections A, B, C, G, H, I and J).

☑ Submit a **Phase IV Final Inspection Report and Completion Statement**, pursuant to 310 CMR 40.0878 and 40.0879 (complete Sections A, B, C, E, G, H, I and J).

☑ Submit a periodic **Phase V Inspection & Monitoring Report**, pursuant to 310 CMR 40.0892 (complete Sections A, B, C, G, H, I and J).

☐ Submit a final **Phase V Inspection & Monitoring Report and Completion Statement**, pursuant to 310 CMR 40.0893 (complete Sections A, B, C, F, G, H, I and J).

You must attach all supporting documentation required for each use of form indicated, including copies of any Legal Notices and Notices to Public Officials required by 310 CMR 40.1400.

C. RESPONSE ACTIONS:

☐ Check here if any response action(s) that serves as the basis for the Phase sub mittal(s) involves the use of Innovative Technologies. (DEP is interested in using this information to create an Innovative Technologies Clear inghouse.)

Describe Technologies:

D. PHASE II COMPLETION STATEMENT:

Specify the outcome of the Phase II Comprehensive Site Assessment:

☐ Additional Comprehensive Response Actions are necessary at this Site, based on the results of the Phase II Comprehensive Site Assessment.

☐ The requirements of a Class A Response Action Outcome have been met and a compl eted Response Action Outcome Statement (BWSC-104) will be submitted to DEP.

☐ The requirements of a Class B Response Action Outcome have been met and a compl eted Response Action Outcome Statement (BWSC-104) will be submitted to DEP.

☐ Rescoring of this Site using the Numerical Ranking System is necessary, based o n the results of the final Phase II Report.

E. PHASE IV COMPLETION STATEMENT:

Specify the outcome of Phase IV activities:

☑ Phase V operation, maintenance or monitoring of the Comprehensive Response Acti on is necessary to achieve a Response Action Outcome. (This site will be subject to a Phase V Operation, Maintenance and Monitoring A nnual Compliance Fee.)

☐ The requirements of a Class A Response Action Outcome have been met. No additi onal operation, maintenance or monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Acti on Outcome Statement (BWSC-104) will be submitted to DEP.

☐ The requirements of a Class C Response Action Outcome have been met. No additi onal operation, maintenance or monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Acti on Outcome Statement (BWSC-104) will be submitted to DEP.

SECTION E IS CONTINUED ON THE NEXT PAGE

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number: 3 - 265

E. PHASE IV COMPLETION STATEMENT: (continued)

☐ The requirements of a Class C Response Action Outcome have been met. Further operation, maintenance or monitoring of the remedial action is necessary to ensure that conditions are maintained and that further progress is made toward a Permanent Solution. A completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP.

Indicate whether the operation and maintenance will be Active or Passive. (Active Operation and Maintenance is defined at 310 CMR 40.0006.):

◯ Active Operation and Maintenance ◯ Passive Operation and Maintenance

(Active Operation and Maintenance makes the Site subject to a Post-RAO Class C Active Operation and Maintenance Annual Compliance Fee.)

F. PHASE V COMPLETION STATEMENT:

Specify the outcome of Phase V activities:

☐ The requirements of a Class A Response Action Outcome have been met and a completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP.

☐ The requirements of a Class C Response Action Outcome have been met. No additional operation, maintenance or monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP.

☐ The requirements of a Class C Response Action Outcome have been met. Further operation, maintenance or monitoring of the remedial action is necessary to ensure that conditions are maintained and that further progress is made toward a Permanent Solution. A completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP.

Indicate whether the operation and maintenance will be Active or Passive. (Active Operation and Maintenance is defined at 310 CMR 40.0006.):

◯ Active Operation and Maintenance ◯ Passive Operation and Maintenance

(Active Operation and Maintenance makes the Site subject to a Post-RAO Class C Active Operation and Maintenance Annual Compliance Fee.)

G. LSP OPINION:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with the information contained in this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and (iii) the provisions of 309 CMR 4.03(5), to the best of my knowledge, information and belief,

> *if Section B indicates that a* ***Phase I, Phase II, Phase III, Phase IV or Phase V Completion Statement*** *is being submitted*, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> *if Section B indicates that a* ***Phase II Scope of Work*** *or a* ***Phase IV Remedy Implementation Plan*** *is being submitted*, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> *if Section B indicates that an* ***As-Built Construction Report*** *or a* ***Phase V Inspection and Monitoring Report*** *is being submitted*, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

☑ Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

LSP Name: Olaf Westphalen LSP #: 9982

Telephone: 978-691-2136 Ext.: _____

FAX: (optional) 978-975-2065

Stamp:

Signature: _____

Date: _____

Massachusetts Department of Environmental Protection **BWSC-108**

Bureau of Waste Site Cleanup

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number: 3 - 265

H. PERSON UNDERTAKING RESPONSE ACTION(S):

Name of Organization: Lockheed Martin Corporation

Name of Contact: Ronald N. Helgerson Title: Senior Project Manager, EES&H

Street: 6801 Rockledge Drive DM315

City/Town: Bethesda State: MD ZIP Code: 20817-0000

Telephone: 301-214-9958 Ext.: _____ FAX: (optional) 301-214-9502

☐ Check here if there has been a change in the person undertaking the Response Ac tion.

I. RELATIONSHIP TO SITE OF PERSON UNDERTAKING RESPONSE ACTION(S): (check one)

☑ RP or PRP Specify: ◯ Owner ◯ Operator ◯ Generator ◯ Transporter Other RP or PRP: former owner/operator

☐ Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G .L. c. 21E, s. 2)

☐ Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ Any Other Person Undertaking Response Action Specify Relationship: _____

J. CERTIFICATION OF PERSON UNDERTAKING RESPONSE ACTION(S):

I, Ronald N. Helgerson , attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and al l documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully au thorized to make this attestation on behalf of the entity legally responsible f or this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to , possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

By: _____ Title: Senior Project Manager, EES&H

(signature)

For: Lockheed Martin Corporation Date: _____

(print name of person or entity recorded in Section H)

Enter address of the person providing certification, if different from address recorded in Section H:

Street: _____

City/Town: _____ State: _____ ZIP Code: _____

Telephone: _____ Ext.: _____ FAX: (optional) _____

YOU MUST COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

ATTACHMENT TO SECTION G

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM

Phase V Monitoring activities at the 1 Network Drive (formerly 183 Bedford Street) site in Burlington, Massachusetts are being conducted under a Tier IB permit. This permit (No. 102258) was approved by the Department of Environmental Protection (DEP) on December 11, 1995. The permit authorized Martin Marietta Technologies, Inc. to perform comprehensive remedial response actions at the site. In a minor permit modification approved by DEP on September 5, 1996, the permittee name was formally changed to Lockheed Martin Corporation, and the Licensed Site Professional (LSP)-of-Record was changed to Donald W. Podsen of EMCON. In a minor permit modification submitted to DEP on May 12, 2000, the LSP-of Record was changed to Olaf Westphalen of IT Corporation (currently Shaw Environmental, Inc.). A Tier IB permit extension application was approved by DEP in March 2000; the current permit expires March 7, 2003. A second Tier IB permit extension application was submitted to DEP on January 30, 2002.

Note that a permanent solution was achieved over most of the site as documented in the partial-RAO submitted January 22, 2002. The partial-RAO did not include two areas: 1) Central Brook and associated wetlands, and 2) a well-defined chlorinated VOC plume. A separate Phase IV Completion Statement and partial RAO for the Central Brook and associated wetlands area are being filed concurrently. This Remedy Operation Status Statement is for the well-defined chlorinated VOC plume where additional Phase V activities (monitored natural attenuation) are still warranted to reach a permanent solution.