Department of the Navy Announces the Proposed Plan for Cleanup of the 22/23 Area Groundwater Site at Marine Corps Base Camp Pendleton

July 2011

The Department of the Navy (DON) (including both the Navy and the Marine Corps) invites you to comment on the proposed cleanup for contaminated groundwater at the Marine Corps Base (MCB) Camp Pendleton 22/23 Area Groundwater site. This site is classified as part of *Operable Unit* 5 or *OU* 5 (words in *italics* are found in the Glossary on page 12).

The proposed cleanup is part of the DON's *Installation Restoration* (IR) program. The purpose of the IR program is to locate and clean up hazardous substances from former activities at military installations.

This Proposed Plan summarizes the cleanup alternatives evaluated for 22/23 Area Groundwater and identifies the preferred alternative.

This Plan also summarizes information that can be found in greater detail in the 2010 *Remedial Investigation/ Feasibility Study (RI/FS)* and other documents contained in the *Administrative Record* for MCB Camp Pendleton. The DON, the United States Environmental Protection Agency (USEPA), and the State of California encourage the public to review this document to better understand this site and other IR program activities that have been conducted at MCB Camp Pendleton.

MCB Camp Pendleton (the Base) is located in northern San Diego County, California. The Base is bordered on the west by the Pacific Ocean and occupies approximately 125,000 acres of land (Figure 1). Nearly 60,000 personnel train at Camp Pendleton every year, with over 35,000 service members actually assigned to the Base.

Public Comment Period

July 26 to August 26, 2011

You are invited to review the cleanup proposal and send written comments during the comment period. See page 11 for information on where to find the documents and how to submit comments.

Public Meeting

6:00 p.m. Monday, August 8, 2011

Pacific View South Mesa Club, Compass Room

This meeting is an opportunity for you to hear more about the cleanup proposal, to ask questions, and to give verbal and written comments in person.

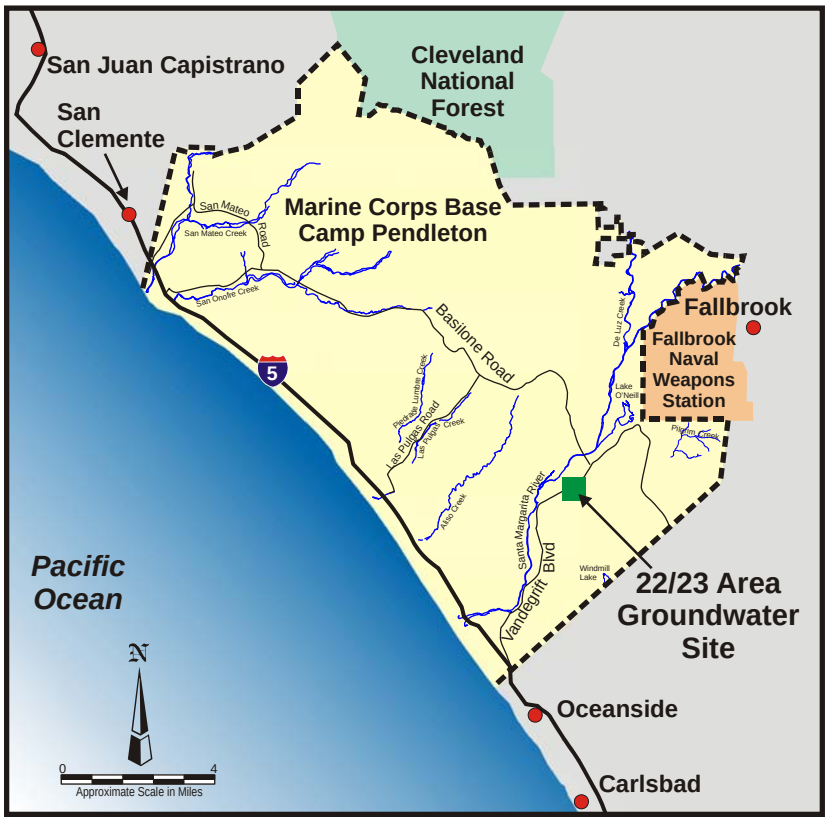

Figure 1: Base Location Map and 22/23 Area Groundwater

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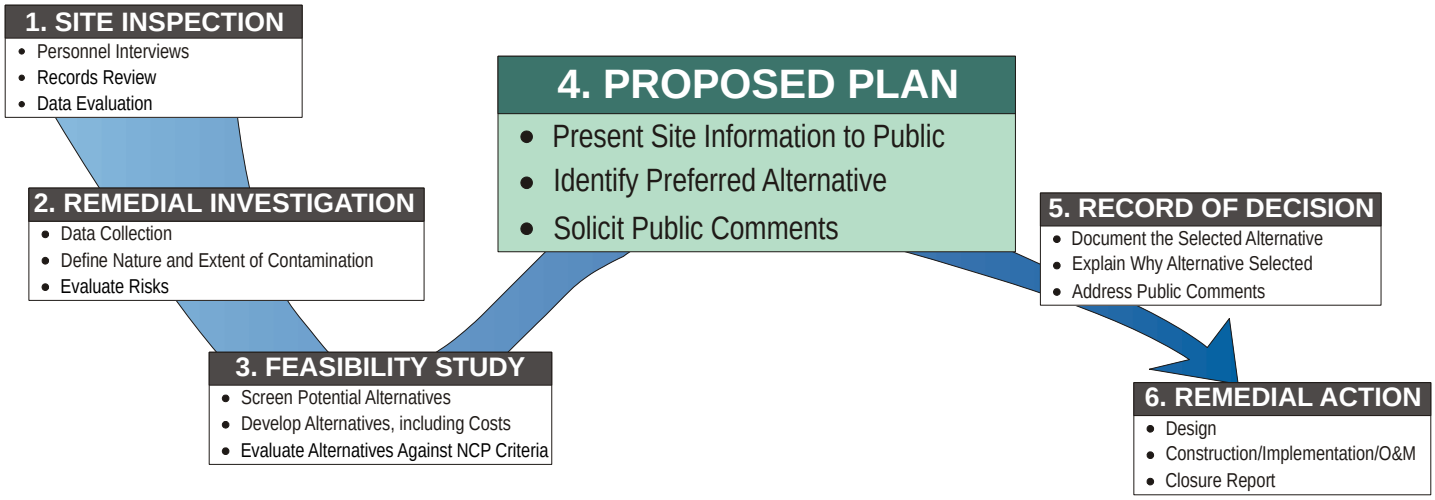


Figure 2: Steps of the CERCLA Process

THE CERCLA CLEANUP PROCESS

The environmental investigations and cleanup at the Base follow the steps shown in Figure 2. These investigations are carried out in accordance with various environmental laws and regulations, including CERCLA (*Comprehensive Environmental Response, Compensation, and Liability Act*), SARA (*Superfund Amendments and Reauthorization Act*), the NCP (*National Contingency Plan*), and Executive Order 12580 (which delegates the implementation of CERCLA to the DON). Steps 1 through 3 were completed for this site.

During step 2, the *Remedial Investigation*, an environmental study was conducted to identify the type and extent of contamination at the site and to determine the risk the site poses to human health and the environment. During step 3, the *Feasibility Study*, the results of the risk assessment were evaluated, and alternative methods for site cleanup were analyzed. The reports completed during the previous steps are available for review in the Administrative Record, at the Base, and at the Oceanside Public Library (see page 11).

This Proposed Plan is step 4 and is based on previous field investigation and reports and analysis of those reports that were done in the first three steps noted above. The Proposed Plan presents site information to the public, identifies the preferred alternative, and solicits public comments.

After step 4, the DON will review your comments and make a decision regarding the cleanup alternatives. The DON will summarize and respond to public comments in a Responsiveness Summary. They will then write the *Record of Decision* (ROD), which is step 5. Any cleanup action is in step 6. Once a site achieves remediation objectives, a closure report is written and approved by the regulatory agencies to document that the process is complete.

RISK ASSESSMENTS STUDY THE POSSIBLE RISK TO HUMAN HEALTH AND WILDLIFE

The studies completed as part of step 2 at 22/23 Area Groundwater included detailed risk assessments to determine whether the chemicals could potentially pose a risk to human health or wildlife.

The *human health risk* assessment examines two types of negative or adverse health risk: cancer risk and noncancer hazard.

First, cancer risk is expressed in terms of the probability that an individual or a particular group of individuals would have an increased chance of contracting cancer over a lifetime period of 70 years. For example, a risk of 1 in a million means that an exposed person could have an increased likelihood of 1 in a million to develop cancer. If the increased cancer risk posed by a site is greater than 1 in a million, but less than 1 in 10,000, then the site falls within the range that the USEPA refers to as a risk management range, where various factors are taken into consideration to determine if remedial action is necessary. If the site risk is greater than 1 in 10,000, then remedial action is generally warranted at a contaminated site.

Second, noncancer health effects are evaluated in terms of a hazard index (HI) that determines negative health effects caused by specific chemicals. If the HI is above 1, then there is a possibility that there might be negative health concerns caused by the site.

The *ecological risk* is evaluated to determine the potential for negative effects on plants and animals from exposure to site contaminants. Plants and animals are identified that represent the types found at each specific site. Coordination between the Base and regulatory agency staff ensures that any action agrees with the Base's mission and with agency requirements. For example, special-status species ("endangered species") occur near the site, and

coordination with the US Fish and Wildlife Service would be appropriate to ensure protection of those species during any remedial action.

For each plant or animal at a site, ecological hazard estimates, or hazard quotients, were computed. If the hazard quotient is greater than 1, then this indicates that the concentrations may pose an unacceptable risk to a particular plant or animal, and the site may need further evaluation.

Human health and ecological risk were calculated to determine the need for action at 22/23 Area Groundwater. A risk evaluation was conducted to estimate the potential negative effects on human health or plants and animals (ecological receptors) from exposure to chemicals on the site. The results of the risk assessments are summarized in the description of the site on page 6.

REMEDIAL ACTION OBJECTIVES

In the Feasibility Study (step 3), potential cleanup alternatives were developed and evaluated. The first step in that process involved developing *Remedial Action Objectives (RAOs*). RAOs are target concentrations for remedial alternatives, calculated from the risk assessment findings. The RAOs are specific to the land use, receptor, and contaminant levels of the subject site. The values are used to direct site remediation activities. Site-specific RAOs were established to identify and screen alternatives that protect human health and the environment. Remedial action objectives for the site are discussed on page 7.

Remediation Goals (RGs) were developed to meet the objectives for the site. The RGs are chemical specific concentration goals set for groundwater that are protective of human health and the environment. The RGs were established for the chemicals that pose a significant risk to human health or ecological receptors, which were developed based on regulatory guidance. The regulatory agencies overseeing this project agreed to the RGs.

CHOOSING A PREFERRED ALTERNATIVE

Following the risk evaluation and establishing cleanup goals for the site, the lead agency develops and analyzes a number of alternative methods to achieve site cleanup, and then chooses a preferred alternative that is considered the best all-around cleanup choice. The cleanup choice is made based on standards that are spelled out in the National Contingency Plan (NCP). The NCP requires that each alternative be evaluated against each of nine criteria, which are divided into two threshold criteria, five balancing criteria, and two modifying criteria, as shown in Figure 3. The alternative that is selected must at minimum meet the two threshold criteria. The five balancing criteria are used to balance the alternatives against each other based on how possible and cost-effective the permanent solutions and treatment can be. State and community acceptance are factored into a final determination of the preferred alternative. Community concerns will be addressed following the 30-day public comment period on the Proposed Plan.

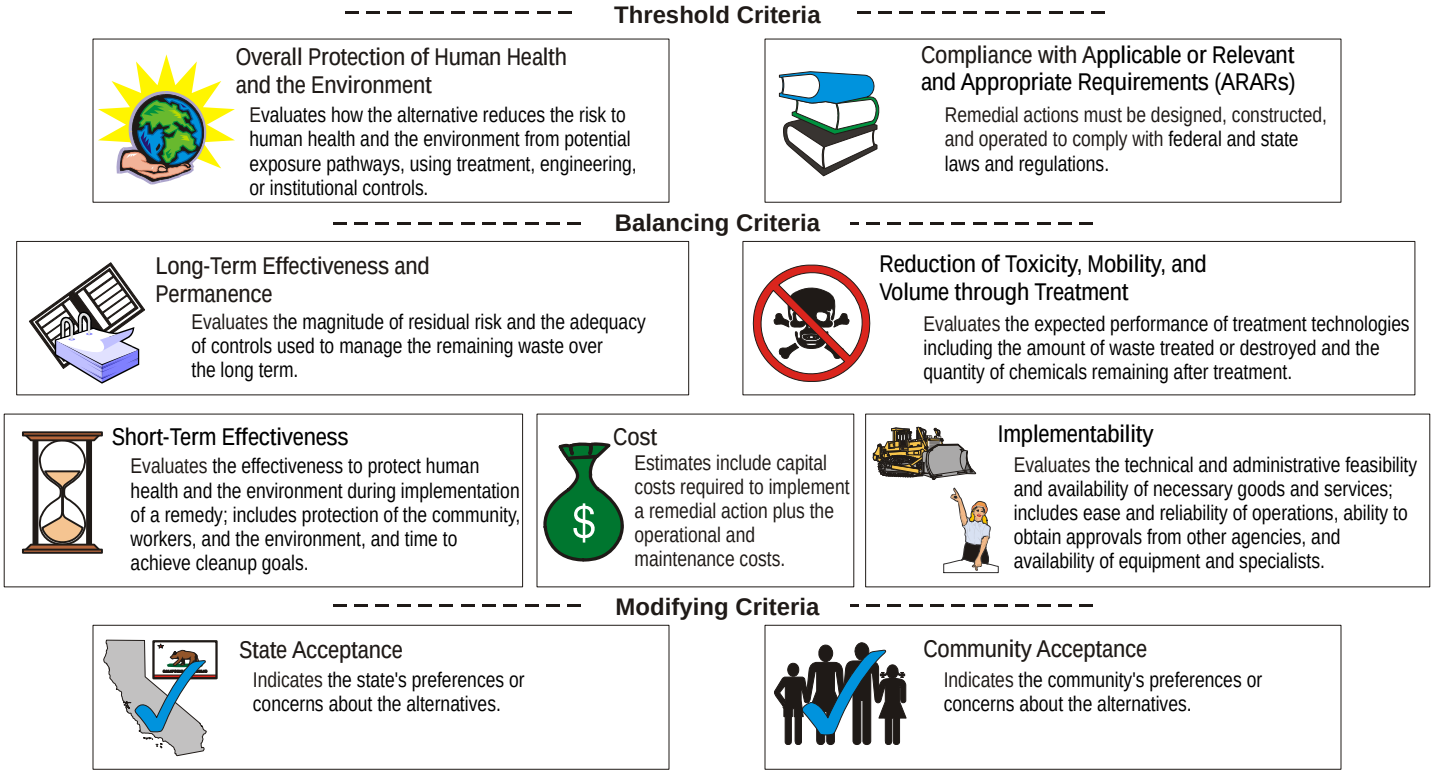


Figure 3: NCP Criteria

22/23 AREA GROUNDWATER

The 22/23 Area Groundwater site is near the southern boundary of the Base, along both sides of Vandegrift Boulevard (Figure 4). Facilities within this area include various industrial warehouses, office buildings, an airfield, and air station complex. The 22/23 Area is expected to remain a developed area as long as the Base remains an active facility. The term “22/23 Area Groundwater” is used to denote the groundwater underlying this industrial operations area, which includes approximately 425 acres.

This site consists only of the contaminated groundwater, not the overlying soils. The 22/23 Area site soils were analyzed and evaluated previously. The remedial actions and No Further Action (NFA) decisions for the soil are documented in the Records of Decision (RODs) for OUs 1, 2, 3, and 5.

The site is located within the Santa Margarita River watershed. This alluvial aquifer is considered the principal water bearing deposit and is the primary water source for the southwestern portion of the Base. Eight groundwater production wells are located within 6,000 feet of the site. One of these wells (2202) is no longer in service.

Subsurface geology consists primarily of stream-deposited alluvium of the Santa Margarita River watershed overlying bedrock. The alluvium consists of unconsolidated sand and silts with lesser amounts of clay and gravel. The water table is relatively shallow, ranging from approximately 5 to 15 feet below ground surface (bgs), and groundwater flows generally toward the southwest.

The results of the human health risk assessment identified *volatile organic compounds* (VOCs) in groundwater as *chemicals of concern* (COCs) based on the potential risk to human health. There is no evidence that dense non-aqueous phase liquids (DNAPLs) are present. The source of these VOCs is from past releases of solvents to the ground during industrial operations, which was common before the enactment of laws in the 1970s that regulated the use and management of such chemicals. Common

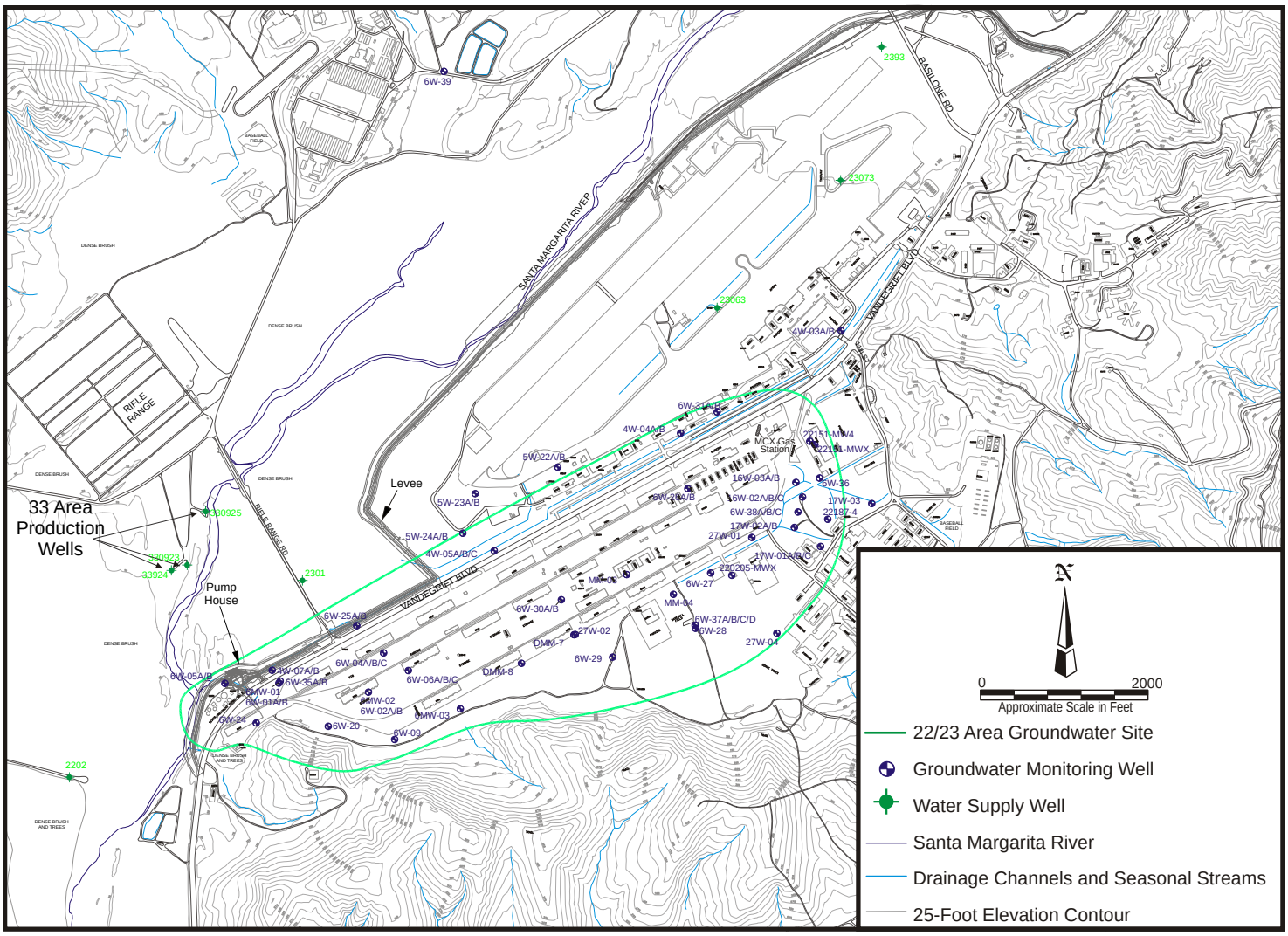


Figure 4: Location of 22/23 Area Groundwater

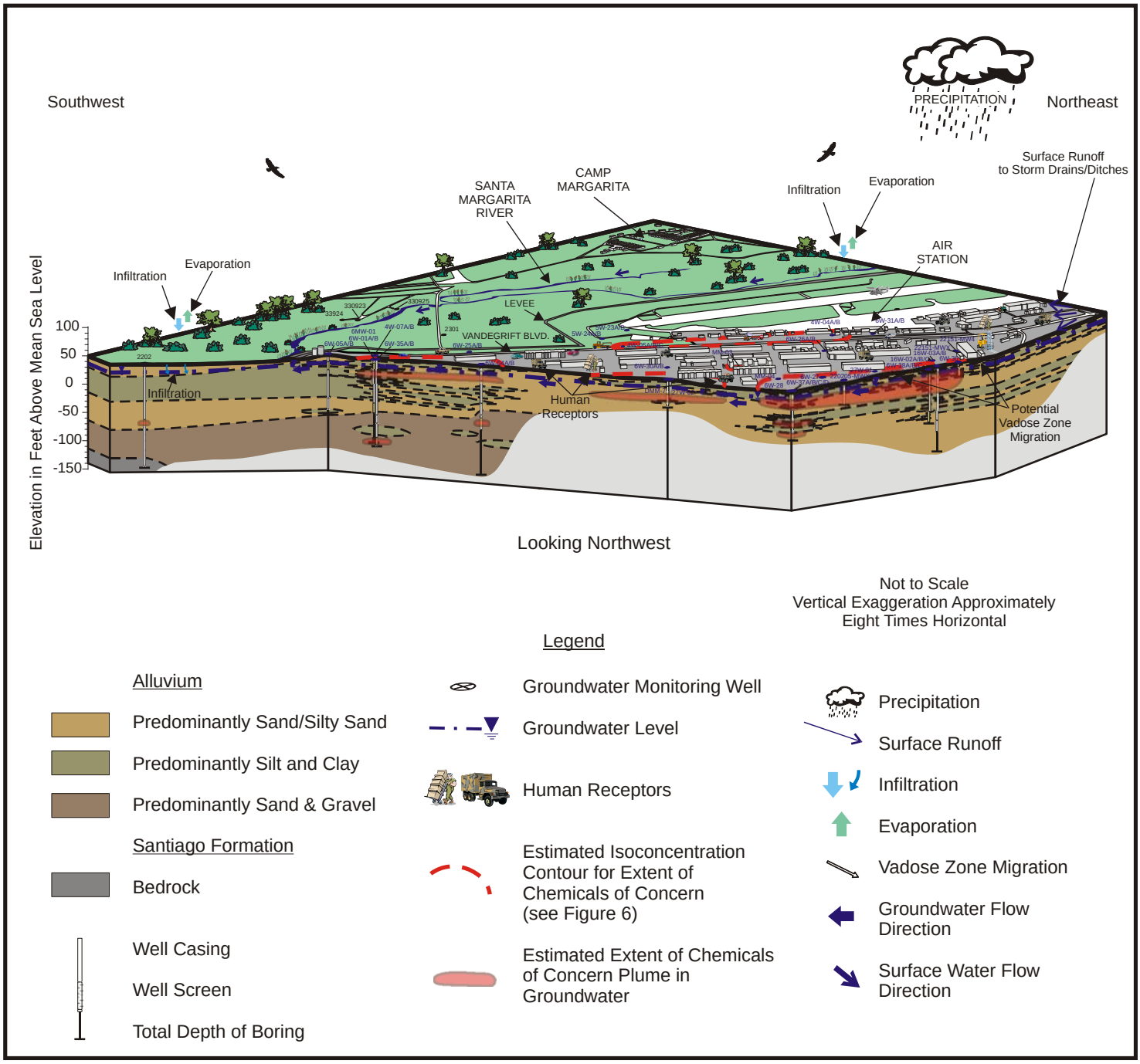


Figure 5: 22/23 Area Groundwater Conceptual Site Model

uses for these chemicals included parts cleaning and paint stripping.

COCs found in groundwater include VOCs: trichloroethene (TCE), *cis*-1,2-dichloroethene (DCE), 1,1-DCE, and vinyl chloride above Federal and California *Maximum Contaminant Levels* (MCLs), and 1,2,3-trichloropropane (TCP) and 1,4-dioxane above California *Notification Levels* (NLs) and *Response Levels* (RLs). The MCLs and RLs are the maximum concentrations permissible in drinking water after treatment. The NLs are concentrations lower than RGs at which the local governing bodies must be notified.

Well 2202 was taken out of service when 1,2,3-TCP was detected in the water above the NL, but below the RL. The Base decided to remove the well from service, even though this was not required by State or Federal regulations. The Base policy is to exercise extra protection of the water supplies.

A conceptual site model, illustrating the location of VOC plumes and geology relative to the area features is shown on Figure 5.

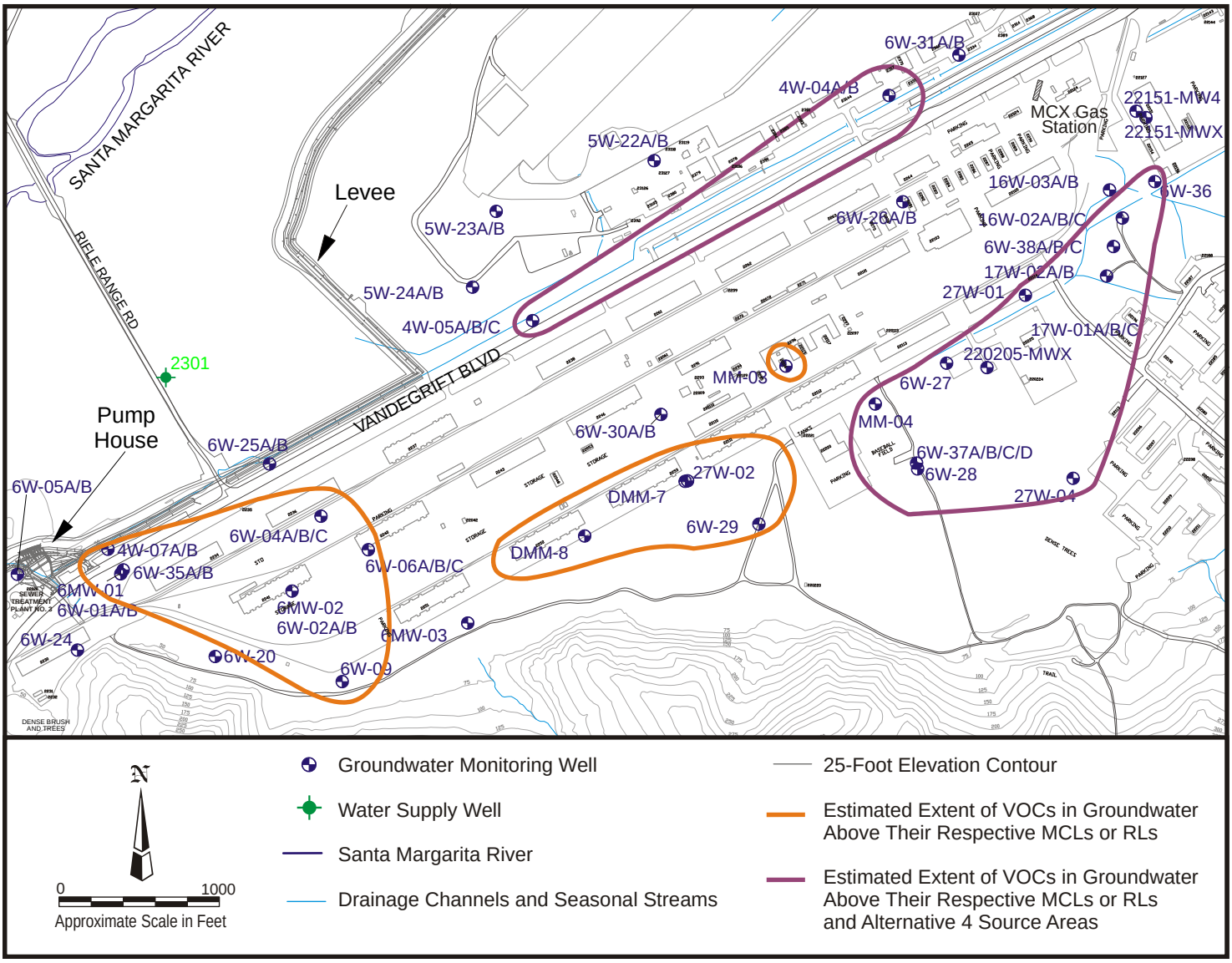


Figure 6: 22/23 Area Groundwater Plume Areas

The available data indicate that most VOCs in groundwater have been slowly and steadily declining, but not as quickly as predicted. For 1,2,3-TCP, not enough data exist to establish a trend. It is likely that VOC concentrations in site groundwater will remain above RGs beneath the 22/23 Area for several more decades if left untreated.

There are five areas of groundwater contamination in the 22/23 Area that are above the RGs. Each of these five areas of groundwater contamination, which are also called plumes, is shown on Figure 6.

The risk assessment found that chemicals in groundwater represent a potential risk to human health based on possible domestic groundwater use. However, there is no actual significant risk to people drinking the water from this area because the Base only allows water that meets regulatory standards into the drinking water system. If groundwater with the highest contaminant concentrations were consumed by people, the estimated cancer risk to human health is greater than 1 in a million, and greater than 1 in 10,000 near wells 6W-04A, DMM-7, and 220205-MWX. Possible dermal contact with contaminated groundwater, for example, in a trench, also results in risk estimates that exceed 1 in a million.

The cancer risk from potential migration of VOCs from soil gas to indoor air are less than 1 in a million, which indicates that there is no significant risk to indoor air receptors at the site.

Exposure of ecological receptors to chemicals in groundwater was addressed by evaluating surface water (i.e., drainage ditches) where contaminated groundwater may discharge and by testing shallow soil and sediment. Risks to ecological receptors at the 22/23 Area from reported groundwater contamination were determined to be low to negligible.

REMEDIAL ACTION OBJECTIVES

The following *Remedial Action Objectives* (RAOs) were developed for the 22/23 Area Groundwater site to address the protection of human health and the environment:

- Prevent inhalation, dermal contact, and ingestion of contaminated groundwater containing VOCs above cleanup levels.
- Protect the beneficial uses and water-quality objectives of the lower Santa Margarita River watershed.

Remedial goals were developed to meet RAOs. Drinking water standards used are the more stringent of the federal and state MCLs and the California RLs.

CLEANUP OPTIONS

Alternatives were considered to lessen or eliminate the risks posed by 22/23 Area Groundwater. The DON looked at five possible cleanup options as well as no action. These alternatives are listed in Table 1.

EVALUATION OF ALTERNATIVES

Based on the potential cancer risks to people from the contaminated groundwater, the DON evaluated each alternative against the nine evaluation criteria in the NCP (Figure 3). The results of the evaluation are summarized in Table 1.

Alternative 1: No Action is required to be evaluated under CERCLA and is included only as a point of comparison. Under this option, nothing is done to clean up the groundwater contamination, prevent land use, or limit contaminant movement. Natural attenuation processes would continue to degrade chemicals; however, there would be no groundwater monitoring data collected to document that natural attenuation is occurring or that the plume is not migrating.

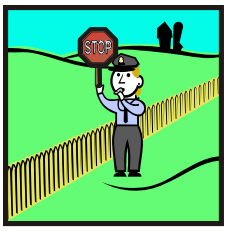
This alternative does not protect human health or provide long-term effectiveness and permanence. It does not comply with *Applicable or Relevant and Appropriate*

Criteria	Alternative					
	1 No Action	2 Land Use Controls and Long-Term Monitoring	3 Alternate Water Supply with Alternative 2	4 Source Area Treatment via In Situ Technologies with Alternative 2	5 Ex Situ Wellhead Treatment at Base Supply Well with Alternative 2	6 Ex Situ Wellhead Treatment at Base Supply Well and Reinjection of Treated Water with Alternative 2
Threshold Criteria						
Overall Protection of Human Health and the Environment	No	Yes	Yes	Yes	Yes	Yes
Compliance with ARARs	No	Yes	Yes	Yes	Yes	Yes
Balancing Criteria						
Long-Term Effectiveness and Permanence	○	◑	◑ to ●	◑ to ●	◑ to ●	◑ to ●
Reduction of Toxicity, Mobility, or Volume by Treatment	○	○	○	◑ to ●	○ to ◑	◑
Short-Term Effectiveness	Not Rated	●	◑ to ●	◑ to ●	◑ to ●	◑ to ●
Implementability	Not Rated	●	◑ to ●	◑	◑	○ to ◑
Cost ($ million)	Alt 1: 0	Alt. 2: 4.1	Alt. 3: 4.0 + Alt.2: 4.1 Total: 8.2	Alt. 4A: 6.9 +Alt. 2: 4.1 Total: 11.0 Alt. 4B: 5.3 +Alt. 2: 4.1 Total: 9.4	Alt 5: 13.0 +Alt 2: 4.1 Total: 17.2	Alt. 6: 18.4 +Alt 2: 4.1 Total: 22.5

○ Low ◑ Moderate ● High

Table 1: Summary of Criteria Evaluation for 22/23 Area Groundwater

Requirements (ARARs) because chemical concentrations detected in the groundwater exceed federal and state requirements. Short-term effectiveness and implementability are not rated because no action is taken. There are no costs for this alternative.

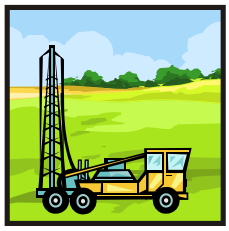


Alternative 2: Land Use Controls and Long-Term Monitoring prevent or limit exposure to hazardous substances left in place at a site. Land use controls can be physical barriers such as fences or signs or legally binding requirements to prevent groundwater use. This alternative includes implementing land use controls and initiating a long-term groundwater monitoring program that would ensure the affected groundwater would not be used in the future. Land use controls for this site would be implemented by MCB Camp Pendleton as part of the site approval process, which is required for all projects at the Base involving construction, acquisition, or modification. The site approval process involves reviewing all plans for environmental constraints at the Base, including wetlands, sensitive species, and IR sites.

The land use controls would protect human health and the environment and meet ARARs, because exposure is reduced by imposing use restrictions and long-term monitoring will be used to assess the extent of contamination. The monitoring program will be used to document the expected decreasing concentrations of contaminants in groundwater, which are expected to be primarily due to physical processes including diffusion, dispersion, and sorption.

Long-term effectiveness and permanence is rated moderate because this alternative relies on natural subsurface physical and biological processes to reduce VOC concentrations over time. However, these mechanisms may not significantly reduce chemical concentrations in a reasonable time, given the persistence of the plumes at the site. Reduction of toxicity is rated low because it does not include active treatment of the contaminated groundwater.

A site-specific health and safety plan would be prepared and implemented to address the short-term risks to site workers during implementation and, therefore, short-term effectiveness is rated high. Limiting groundwater use is rated high for implementability because groundwater monitoring involves common, proven, and reliable methods and practices. The cost is approximately $4,143,000 to implement this alternative for 30 years.

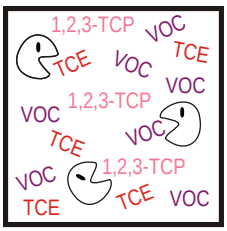


Alternative 3: Alternate Water Supply with Alternative 2 would provide an alternate supply of drinking water by installing a new water supply well. This new well would be installed to replace Well 2202 that was taken out of service due to detections of 1,2,3-TCP. The new well would be designed to help meet the long-term needs for drinking water at the Base. The first step to determine the best place to site the new well would be to conduct an investigation to identify uncontaminated areas of the groundwater watershed. Then the new well would be installed at the approval of the Base commanding officer. This alternative would also include all of the land use controls and long-term groundwater monitoring and costs for Alternative 2.

Human health and the environment are protected via the land use controls discussed in Alternative 2. This alternative would be implemented in compliance with ARARs. The new water well would be installed and operated to meet federal and state requirements.

Like Alternative 2, it does not include active treatment of the contaminated groundwater and relies on natural subsurface physical and biological processes to reduce VOC concentrations over time.

A site-specific health and safety plan would be prepared and implemented to address the short-term risks to site workers during implementation, but additional short-term risks to the environment during investigation and drilling in the watershed would need to be addressed; therefore, short-term effectiveness is only rated moderate to high. Implementability is ranked moderate to high because the technologies, equipment, and labor needed for well drilling/ installation and pipeline construction are widely available, but there are additional logistical issues because of drilling in the watershed. The cost is approximately $4,016,000, plus the $4,143,000 to implement Alternative 2 for 30 years, for a total of $8,159,000.



Alternative 4: Source Area Treatment via In Situ Technologies with Alternative 2 involves the installation and operation of one of two in situ (in place) remediation systems to destroy contamination in the two source areas with the highest contamination identified within the 22/23 Area (source areas on Figure 6). Alternative 4 would include all of the land use controls and long-term groundwater monitoring and costs, as discussed for Alternative 2.

Both injectable reactive metals (zero-valent iron or zero-valent zinc) (Alternative 4A) and enhanced bioremediation (Alternative 4B) have proven track records for remediation of TCE and its breakdown products. But for 1,2,3-TCP, both technologies have been effective only in laboratory tests. Pilot studies will be conducted to determine the most effective treatment for 1,2,3-TCP. Then, the choice will be made based on the best technology available when the DON starts the remedial action.

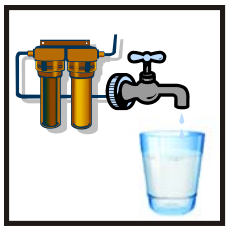
Reducing contaminant concentrations in the source areas by itself would not provide protection of human health.

Such protection would be accomplished by the land use controls and long-term monitoring program described in Alternative 2. However, over time, the reduction of contaminant concentrations would protect human health. Alternative 4 would comply with ARARs because MCLs would be attained through chemical mass reduction. It includes monitoring to evaluate treatment effectiveness and complies with federal and state groundwater monitoring requirements.

Reduction of toxicity is rated moderate to high for this alternative because contaminants would be destroyed in the two source areas. Long-term effectiveness and permanence is rated moderate to high, because this alternative would reduce chemical mass in the groundwater plume.

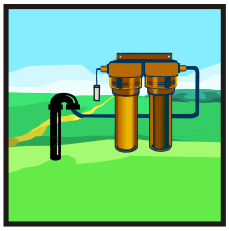
A site-specific health and safety plan would be prepared and implemented to address the short-term risks to site workers during implementation, such as exposure to dust and contaminated groundwater during field implementation and long-term monitoring. Areas disturbed by implementing this alternative would be restored upon completion of the treatment system construction. Therefore, short-term effectiveness is rated moderate to high. Implementability is only ranked moderate because, while system installation involves proven and reliable methods and practices, the existing site infrastructure poses some logistical constraints that would need to be addressed.

The cost to implement Alternative 4A is approximately $6,923,000, plus the $4,143,000 to implement Alternative 2 for 30 years, for a total of $11,066,000. The cost to implement Alternative 4B is approximately $5,255,000, plus the $4,143,000 to implement Alternative 2 for 30 years, for a total of $9,398,000.



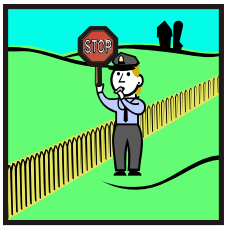
Alternative 5: Ex Situ Wellhead Treatment at Base Supply Well with Alternative 2 involves treating water from an existing Base supply well to use as drinking water. Ex situ wellhead treatment means that groundwater will be pumped, and then treated above the ground. The treatment at an existing Base supply well would use liquid phase activated carbon adsorption and filtration. This alternative would include all of the land use controls and long-term groundwater monitoring and costs, as discussed for Alternative 2.

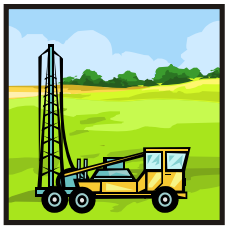
Alternative 5 protects human health by continuously removing chemicals from the groundwater using an activated carbon adsorption system prior to use as drinking water. However, reduction of toxicity is rated low to moderate because it does not include active treatment of contamination in the source area, only contamination being treated in the groundwater extracted by one drinking water well. The carbon adsorption system, including filtration columns, system piping and pumps, would be constructed using widely available equipment and labor. System installation involves common methods and practices. Activated carbon adsorption is a commonly used technology and is readily implementable. However, utility disruption and temporary closure of roads may occur, and treatment activities would require coordination with the Base Water Resources Department. In addition, this technology would require periodic monitoring of the treated water and change-outs of the activated carbon to ensure effectiveness of the water treatment. The cost is approximately $13,046,000, plus the $4,143,000 to implement Alternative 2 for 30 years, for a total of $17,189,000.

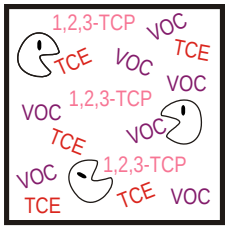


Alternative 6: Ex Situ Wellhead Treatment at Base Supply Well and Reinjection of Treated Water with Alternative 2 involves extraction of water from an existing Base supply well, treatment of the extracted water, and reinjection of the treated water. The location of the reinjection would be designed to provide hydraulic conditions that would be protective of existing Base wells. Alternative 6 would include all of the land use controls and long-term groundwater monitoring and costs, as discussed for Alternative 2.

Alternative 6 continuously removes chemical mass from the groundwater and creates a clean water zone close to existing Base drinking water supply wells. Reduction of toxicity is rated moderate because it does not include active treatment of contamination in the source area, only contamination being treated in the groundwater extracted by one drinking water well. MCLs would be attained through chemical mass removal via liquid phase activated carbon adsorption. The groundwater extraction and reinjection would lessen the possibility of contamination impacting existing 33 Area wells (Figure 4). Spent activated carbon will need to be replaced or regenerated whenever the effluent VOC concentration exceeds the RG. The piping would need to be installed underground within the floodplain, and the injection well would need to be constructed to withstand periodic flooding of the Santa Margarita River. In addition, this technology would require periodic monitoring of the treated water and change-outs of the activated carbon to ensure effectiveness of the water treatment. The cost is approximately $18,401,000, plus the $4,143,000 to implement Alternative 2 for 30 years, for a total of $22,554,000.







RECOMMENDED CLEANUP ALTERNATIVE

The DON recommends combining Alternatives 3 and 4 (Alternate Water Supply and Source Area Treatment via In Situ Technologies) both of which include the provisions of Alternative 2 Land Use Controls and Long-Term Monitoring. Combining these alternatives provides the best protection of both human health and the environment, actively reduces contamination, and provides an option for an alternate source of drinking water. In the event that contamination is detected in an existing or new supply well that requires action in the future, then a decision will be made at that time in consultation with the Base commander regarding the need for wellhead treatment, removing the well from service, or other steps that may be appropriate. An evaluation of the NCP criteria for the combined Alternatives 2, 3, and 4 is presented below.

Overall Protection of Human Health and the Environment

The combined Alternatives 2, 3, and 4 are considered protective of human health and the environment because of the continued restrictions on groundwater use. Alternative 4 would also provide additional protection of human health and the environment by treating the contaminants in the two VOC source areas, which would clean the groundwater faster.

Compliance with ARARs

Alternative 2 would comply with ARARs, and RGs would be attained in groundwater over time through natural attenuation processes. Alternative 3 would comply with ARARs by providing an alternate water supply to limit exposure and achieving RGs over time through natural attenuation. Alternative 4 would comply with ARARs, and RGs would be attained through groundwater treatment.

Long-Term Effectiveness and Permanence

The combined Alternatives 2, 3, and 4 provide the best balance of tradeoffs with respect to the balancing criteria.

The long-term effectiveness of Alternative 2 depends on continued enforcement of use restrictions and monitoring. Alternative 3 would provide more long-term effectiveness and permanence assuming the new well that is installed as an alternate water supply remains free of contamination over the life span of the well. Alternative 4 also improves long-term effectiveness and permanence through the direct treatment of VOCs in groundwater.

Reduction of Toxicity, Mobility, or Volume Through Treatment

Alternatives 2 and 3 do not provide active reduction of toxicity, mobility, and volume through treatment of the contaminated groundwater. However, the in situ technologies in Alternative 4 would reduce the chemical mass and the volume of contaminated groundwater as treatment proceeds.

Short-Term Effectiveness

Alternatives 2, 3, and 4 pose minimal risk to site workers in the short-term, during groundwater sampling and analysis, but some additional risk during implementation and operation and maintenance (O&M). Potential exposure and protection procedures for workers would be addressed in a site health and safety plan.

Implementability

Alternative 2 is an administrative process already used for activities at the Base and, therefore, is readily implementable. The construction activities associated with Alternative 3 are common techniques and are easily implemented. Some logistical challenges would be associated with implementation of the in situ technologies in Alternative 4, but it is still considered implementable.

Cost

The cost is approximately $4,143,000 to implement Alternative 2 for 30 years and $4,016,000 to implement Alternative 3. Alternatives 4A and 4B would cost approximately $6,923,000 and $5,255,000, respectively. The combined total would be approximately $15,082,000 for Alternatives 2, 3, and 4A and $13,414,000 for Alternatives 2, 3, and 4B.

State Acceptance

The USEPA and the State of California concur with the preferred combined Alternatives 2, 3, and 4. Copies of the regulatory comments can be viewed at the information repositories shown on page 11.

Community Acceptance

The public is encouraged to participate and provide comments. Details on the public comment period and the public meeting are provided on page 11.

CONCLUSION

In summary, the DON recommends the combined Alternatives 2, 3, and 4 because it would be protective of human health and the environment, would comply with ARARs, would be cost-effective, would use permanent solutions, and would be implementable, as required by CERCLA and the NCP.

The USEPA and State of California have provided comments throughout the CERCLA process for this site, including this Proposed Plan. Those comments have been incorporated, and the agencies concur with the preferred alternatives outlined in this Proposed Plan.

Public input is important in the decision-making process. Nearby residents and interested parties are encouraged to use the comment period to ask questions about the preferred remedial alternative for 22/23 Area Groundwater. The DON will summarize and respond to public comments in a Responsiveness Summary, which will become part of the official Record of Decision.

This Proposed Plan fulfills public participation requirements of CERCLA Section 117 (a), which specifies that the lead Agency (Navy) must publish a plan outlining remedial alternatives evaluated for each site and identify the preferred alternative. The remedial alternatives were presented in detail in the 22/23 RI/FS. The FS and other documents referenced in this Proposed Plan are available for public review in the Administrative Record at the Information Repositories.

WHO TO CONTACT FOR MORE INFORMATION

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If you have comments on this Proposed Plan or questions about the IR program, contents, or issues discussed in the Proposed Plan, please contact any of the above individuals.

WHERE YOU CAN FIND THE CLEANUP PLAN AND OTHER DOCUMENTS

Documents relating to the IR program and this Proposed Plan can be found for public review and comment at the following information repositories:

Administrative Record
Naval Facilities Engineering Command Southwest
1220 Pacific Highway (NBSD Bldg. 3519)
San Diego, CA 92132
Monday through Friday 8 am to 4:30 pm
Please call (619) 556-1280 for appointment.

MCB Camp Pendleton Environmental Security Office
Building 22165
MCB Camp Pendleton, CA 92055-5008
Monday through Thursday 9 am to 4 pm
Please call (760) 725-9744 for appointment.

Oceanside Public Library
330 N Coast Hwy, Oceanside, CA 92054
Monday through Tuesday 9 am to 8 pm and Wednesday through Saturday 9 am to 5:30 pm
(760) 435-5600

COMMENT PERIOD AND PUBLIC MEETING

The public comment period for this Proposed Plan offers you an opportunity to provide input to the process for controlling contamination and risks at Camp Pendleton. The public comment period will begin on July 26, 2011 and end on August 26, 2011, and a public meeting will be held on August 8, 2011 at 6:00 pm in the Pacific View South Mesa Club (Building 202850). To attend the public meeting, enter the main gate, and turn right at the first stop light, which is Wire Mountain Road. Drive up the hill to the first stop sign and make a left onto San Jacinto Road. The Club is located at the end of the street on the left side.

All interested parties are encouraged to attend the meeting to learn more about the alternatives developed for the site. The meeting will provide an additional opportunity for the public to submit comments on this Proposed Plan to the DON.

RECORD OF DECISION

Following the public comment period, the USEPA, the State of California, and the DON will sign a Record of Decision. It will detail the approach chosen for the site and include the DON's responses to comments received during the public comment period.

GLOSSARY

Administrative Record – All documents that have a legal bearing and were used to make decisions on cleanup actions.

ARAR (Applicable or Relevant and Appropriate Requirement) – This is a federal or state law that must be considered in choosing a remedial action. Remedial actions must be designed, constructed, and operated to comply with all ARARs.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) – This federal law outlines a series of steps to address the cleanup of hazardous waste disposal and spill sites. CERCLA requires the cleanup, or remediation, of hazardous waste sites created by historical disposal practices. Congress gave the USEPA responsibility for overseeing compliance with this law.

Ecological Risk – A qualitative or quantitative estimate of the potential impact on local plants and animals exposed to chemicals detected in the environment.

Feasibility Study (FS) – A cost and engineering study that looks at all of the possible cleanup options that are available and evaluates their ability to clean up contamination at a site.

Human Health Risk – A qualitative or quantitative estimate of the potential impact on the human population exposed to chemicals detected in the environment.

Installation Restoration (IR) – The IR program provides guidance and funding for the investigation and remediation of hazardous waste sites caused by disposal activities at military installations.

Land Use Controls – These are measures designed to prevent or limit exposure to hazardous substances left in place at a site, or to assure the effectiveness of a chosen remedy. Land Use Controls can be physical barriers such as fences or signs or legally binding requirements to prevent ground disturbance at a site.

Maximum Contaminant Levels (**MCLs)** – These standards are set by the USEPA for drinking water quality. An MCL is the legal threshold limit on the amount of a substance that is allowed in public water systems under the Safe Drinking Water Act. The limit is usually expressed in milligrams or micrograms per liter of water.

National Contingency Plan (NCP) – The NCP establishes the regulatory requirements for CERCLA decision documents, such as this Proposed Plan.

Notification Levels (NLs) – These are levels set by the State for chemicals in drinking water that lack MCLs. If the concentration is greater than those set by the State, timely notification of the local governing bodies (e.g., city council, county board of supervisors, or both) is required.

Operable Unit (OU) – A group of one or more cleanup sites. Often the sites within the operable unit have similar characteristics, such as contaminants, industrial processes, or location.

Remedial Action Objective (RAO) – Describes what the site cleanup is expected to accomplish.

Remediation Goal (RG) – The acceptable level of a chemical to protect human health and ecological receptors based on regulatory guidance at a specific site. Development of these goals is based on scientific studies and are agreed to by the agencies.

Remedial Investigation (RI) – An environmental study that identifies the nature and extent of contamination at a site.

Response Levels (RLs) – These are levels set by the State for chemicals in drinking water that lack MCLs. If the level is greater than those set by the State, then the drinking water source is removed from service.

Record of Decision (ROD) – A public document that explains which cleanup alternatives will be used at NPL sites. The ROD is based on information and technical analysis generated during the remedial investigation/feasibility study and consideration of public comments and community concerns.

SARA (Superfund Amendments and Reauthorization Act) – The Superfund Amendments and Reauthorization Act of 1986 reauthorized CERCLA to continue cleanup activities around the country. Several site-specific amendments, definitions clarifications, and technical requirements were added to the legislation, including additional enforcement authorities. Title III of SARA also authorized the Emergency Planning and Community Right-to-Know Act.

Volatile Organic Compounds (VOCs) - refers to organic chemical compounds that have high vapor pressures and easily form vapors at normal temperatures and pressure. The term is generally applied to organic solvents, paint additives, aerosol spray can propellants, fuels, petroleum distillates, dry cleaning products and many other industrial and consumer products ranging from office supplies to building materials. VOCs are also naturally emitted by a number of plants and trees.