

Dave Johnston thought Ponds
4a, 9, 11, + 17 were potential
CRLF
habitat.

Sedimentation Basin/Pond Description Report

For your review, and to determine which sedimentation basins/ponds may be suitable habitat for California Red Legged Frog ("CRLF"), I have summarized the design and current conditions of each pond along with a photograph and a determination on if a pond could support suitable habitat for CRLF.

For the purpose of this analysis, "suitable habitat" includes conditions which provide the primary constituent elements for CRLF and is defined as habitat that provides conditions that (1) provide pond water of a depth and duration suitable for CRLF survival; (2) could be utilized for foraging, resting or hiding habitat, and provide cover from predation; and (3) CRLF could live a significant portion of their life cycle within a pond and be able to move back-and-forth to nearby suitable habitat areas. These conditions which define "suitable habitat" in the context of this report are derived from the habitat description described in the 1996 Federal Register listing CRLF as threatened, description of CRLF habitat and primary constituent elements for CRLF listed on the Sacramento USFWS web page and personnel communication with CRLF expert Dr. Mark Jennings.

Ponds that do not provide elements that would allow CRLF to survive for a reasonable amount of time are not considered suitable habitat in this report. These include several off-stream Ponds constructed to meet the requirements of a Cleanup and Abatement Order issued by the San Francisco Bay Regional Water Quality Control Board ("RWQCB") in 1999. These Ponds provide sediment controls for stormwater leaving the operational quarrying and cement manufacturing areas and entering Permanente Creek, and to reduce sediment loading into Permanente Creek.

In summary, HBG determined the stretch of Permanente Creek within the Study Boundary and Ponds 4A, 13, 14, 20, 21, and 22 may be considered suitable habitat for CRLF. Of these, the latest 2008 surveys by Rana Resources indicate that only Ponds 14 and 22 are currently inhabited by CRLF. In contrast, HBG determined that Ponds 9, 13A, 13B, 16, 17, and 19 do not provide suitable habitat for CRLF. HBG also determined that Pond 11 is not suitable habitat. Please note that the Long-Term Maintenance Plan will incorporate protective measure for all ponds regardless of their suitability as habitat for CRLF.

Permanente Creek:

CRLF Status: Permanente Creek, from Pond 14 to Pond 13, is considered suitable habitat and provides a movement corridor for CRLF:

- During a 1997 survey by Radian International, CRLFs were consistently observed at a single location approximately 30 yards downstream of Pond 14 in a small pool (10x5 feet) located outside and downstream of the Study Area.

4a could provide water for a
new CRLF pond

— CRLF NOT
AGREE

- Rana Resources conducted a site assessment in 2008 and concluded that Permanente Creek likely serves as a movement corridor between known breeding populations.



Pond 14 (15,541 sq feet; 0.36 acre):

General Description/Design Capacity: Pond 14 is an in-stream pond located in the northeast portion of the Study Area and is immediately downstream of Pond 22. This Pond is located adjacent to the downstream property boundary and limit of the Study Area. Pond 14 is approximately 253 feet long and ranges from 75 to 91 feet wide with an average design depth of 16 feet. Pond 14 is bounded on the downstream side by a concrete weir (see photo) constructed to increase the sedimentation capture rate and improve sediment removal efficiency. The baseline design capacity of Pond 14 is approximately 9,150 cubic yards.

Pond 14 is the last sedimentation basin before water discharges downstream from the property boundary. Pond 14 is used during major storm events and/or is used during emergency situations where additional storage capacity is needed to capture excess sedimentation flowing down Permanente Creek. Water is diverted from Pond 22 to Pond 14 during such events using a mechanical diversion structure between Pond 22 and 14.

Current Condition: As shown in the photo, Pond 14 is an open water pond with a wetland fringe dominated by tules and other emergent vegetation. The current depth of the pond is unknown but is at least deep enough to limit the establishment of tules to the outer most fringes. Pond 14 is accessible to CRLFs moving from adjacent suitable habitat areas and does provide cover, foraging and resting habitat for CRLFs. The

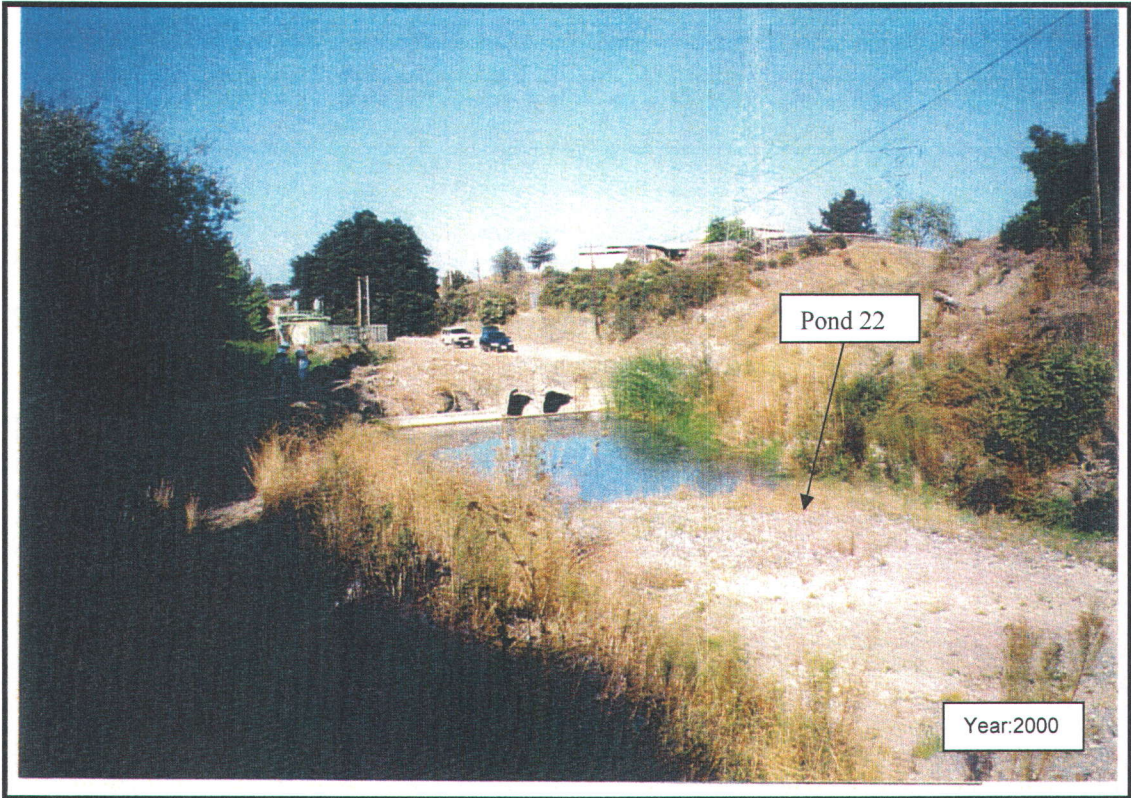
mechanical structure used to divert stormwater from Pond 22 to Pond 14 during storm events is not operational due to excess sedimentation and vegetation growth.

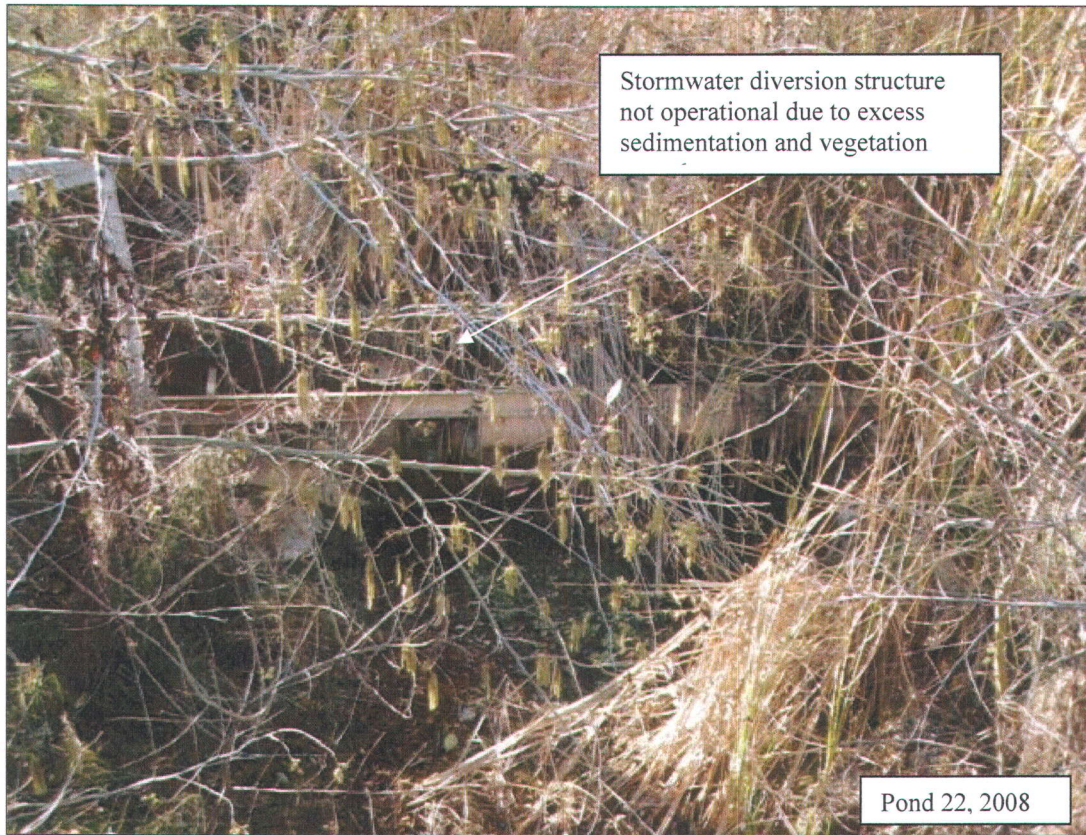
CRLF Status: Based on surveys conducted by CRLF experts, current and past hydrologic and vegetative conditions, proximity/hydrologic connection to Permanente Creek, and minimal barriers to migration from adjacent suitable habitat, HBG determined Pond 14 currently provides suitable habitat and breeding habitat for CRLF.

Studies:

- Radian International, LLC conducted a site assessment and field survey (day and night) for CRLF on September 25 and 26, 1997 (Radian International, LLC 1997). No CRLF were observed within Pond 14 but the report concluded that Pond 14 provided potential CRLF habitat but did not provide breeding habitat. The same assessment observed CRLF at a single location approximately 30 yards downstream of Pond 14 in a small pool (10x5 feet).
- In 2006 and 2007 Rana Resources conducted full protocol surveys of all ponds and the results concluded CRLF were present in Pond 14 and were successfully breeding in Pond 14.

The most recent survey of all the ponds was conducted on the night of July 30, 2008. The survey indicated that Ponds 14 and 22 are currently the only ponds occupied by CRLF.





Pond 22 (9,422 square feet; 0.22 acre):

General Description/Design Capacity: Pond 22 is an instream pond constructed as an open water basin (see 2000 photo). It is in the northeastern portion of the Study Area and is immediately upstream of Pond 14. Pond 22 is approximately 196 feet long (175 feet from the concrete weir) and 46 feet wide. Pond 22 is bound on the downstream side by a concrete weir constructed in 2000 to increase the sediment capture rate and improve sediment removal efficiency. Pond 22 was constructed to an average depth of 12 feet below the top of the concrete weir. The baseline design capacity is 4,190 cubic yards.

Current Condition:

Due to the accumulation of sediment, Pond 22 no longer has the capacity to store stormwater. It is dominated by emergent vegetation within the interior, and riparian vegetation along the exterior banks. The soils are saturated throughout the interior along with a small channel which flows directly into Permanente Creek (bypassing Pond 14). Pond 22 is accessible to CRLF moving from adjacent suitable habitat areas and does provide cover, foraging and resting habitat for CRLFs. The mechanical structure used to divert stormwater from pond 22 to Pond 14 during storm events is not operational due to excess sedimentation and vegetation growth around the culvert.

To the extent that Pond 22 has developed wetland and riparian indicators, it is because maintenance activities have been delayed due to regulatory requirements resulting from the discovery of the presence of CRLF. The 2000 photo was taken prior to sedimentation removal activities that year. Please notice the lack of vegetation compared to the current

conditions (2008 Photo). When proper maintenance is performed, conditions would resemble what is shown in the 2000 photo.

Due to the delayed maintenance activities, Pond 22 and Pond 14 no longer function as originally designed to meet CWA requirements and the Cleanup and Abatement Order issued by the RWQCB.

CRLF Status: Based on surveys conducted by CRLF experts, current and past hydrologic and vegetative conditions, proximity/hydrologic connection to Permanente Creek, and minimal barriers to migration from adjacent suitable habitat, HBG determined Pond 22 currently provides suitable habitat for CRLF.

Studies:

- Radian International, LLC conducted a site assessment and field survey (day and night) for CRLF on September 25 and 26, 1997 (Radian International, LLC 1997). No CRLF were observed within Pond 22 but the report concluded that Pond 22 provided potential CRLF habitat but did not provide breeding habitat.
- In 2006 and 2007 Rana Resources conducted full protocol surveys of all ponds and the results concluded CRLF were present in Pond 22.
- The most recent survey of all the ponds was conducted on the night of July 30, 2008. The survey indicated that Ponds 14 and 22 are currently the only ponds occupied by CRLF.



Pond 21 (2,272 sq ft; 0.05 acre):

General Description/Design Capacity: Pond 21 was constructed as an open water sedimentation basin. It is a concrete structure built in uplands. It captures nuisance water from the truck washing station, stormwater from operational roads along the railroad tracks, and sheet flow from other impervious surfaces such as the paved roads near the truck washing station. Pond 21 was constructed to an average depth of 3 feet with a baseline design capacity of 252 cubic yards.

Current Condition: Approximately 2 feet of sedimentation has accumulated within Pond 21. The sedimentation supports the growth of herbaceous vegetation and is dominated by plants typically found within wetlands. Current conditions support saturated soils and shallow ponding during the winter/early spring. Pond 22 is accessible to CRLF moving from adjacent suitable habitat areas and does provide cover, foraging, and resting habitat for CRLFs. During the Rana Resources 2006 and 2007 surveys, CRLF were found to successfully breed within Pond 21. During the 2008 survey, Pond 21 contained very low levels of water and no CRLF were observed.

CRLF Status: Based on surveys conducted by CRLF experts, current and past hydrologic and vegetative conditions, proximity/hydrologic connection to Permanente Creek, and minimal barriers to migration from nearby suitable habitat, HBG determined Pond 21 currently provides suitable habitat for CRLF and may support breeding habitat in its current condition.

Studies:

- In 2006 and 2007, Rana Resources conducted full protocol surveys of all ponds and the results concluded CRLF were present and successfully breeding in Pond 21.

- The most recent survey of all the ponds was conducted on the night of July 30, 2008. The survey results concluded CRLF were not present within Pond 21 but that Pond 21 did provide suitable habitat.



Pond 20 (1,451 sq ft; 0.03 acre):

General Description/Design Capacity: Pond 20 was constructed as an open water sedimentation basin. It is a concrete structure built in uplands. It captures nuisance water from the truck washing station, stormwater from operational roads along the railroad tracks, and sheet flow from other impervious surfaces. Pond 20 was constructed to an average depth of 3 feet with a baseline design capacity of 161 cubic yards.

Current Condition: The conditions within pond 20 are similar to Pond 21. Approximately 2 feet of sedimentation has accumulated within Pond 20. The sedimentation supports the growth of herbaceous vegetation and is dominated by plants typically found within wetlands. Current conditions support saturated soils and shallow ponding during the winter/early spring. Pond 20 is accessible to CRLF moving from nearby suitable habitat areas and does provide cover, foraging, and resting habitat for CRLFs.

CRLF Status: Based on surveys conducted by CRLF experts, current vegetation conditions, and the proximity of Pond 20 to known CRLF occurrences, HBG determined Pond 20 currently provides potential habitat for CRLF.

Studies:

- In 2006 and 2007 Rana Resources conducted full protocol surveys of all ponds and the results concluded CRLF were not present in Pond 20.
- The most recent survey of all the ponds was conducted on the night of July 30, 2008. The survey results concluded CRLF were not present within Pond 20 but that Pond 20 did provide suitable habitat.



Pond 19 (624 sq ft; 0.014 acre) :

General Description/Design Capacity: Pond 19 was constructed as an open water sedimentation basin. It is a concrete structure with a water pump. It captures nuisance water from the truck washing station, stormwater from operational roads along the railroad tracks, and sheet flow from other impervious surfaces. Pond 19 slopes toward the water pump from a depth of 1 - 2 feet near the water pump. The water pump keeps the water depth to a maximum of approximately 6 inches. It has a baseline design capacity of 46 cubic yards.

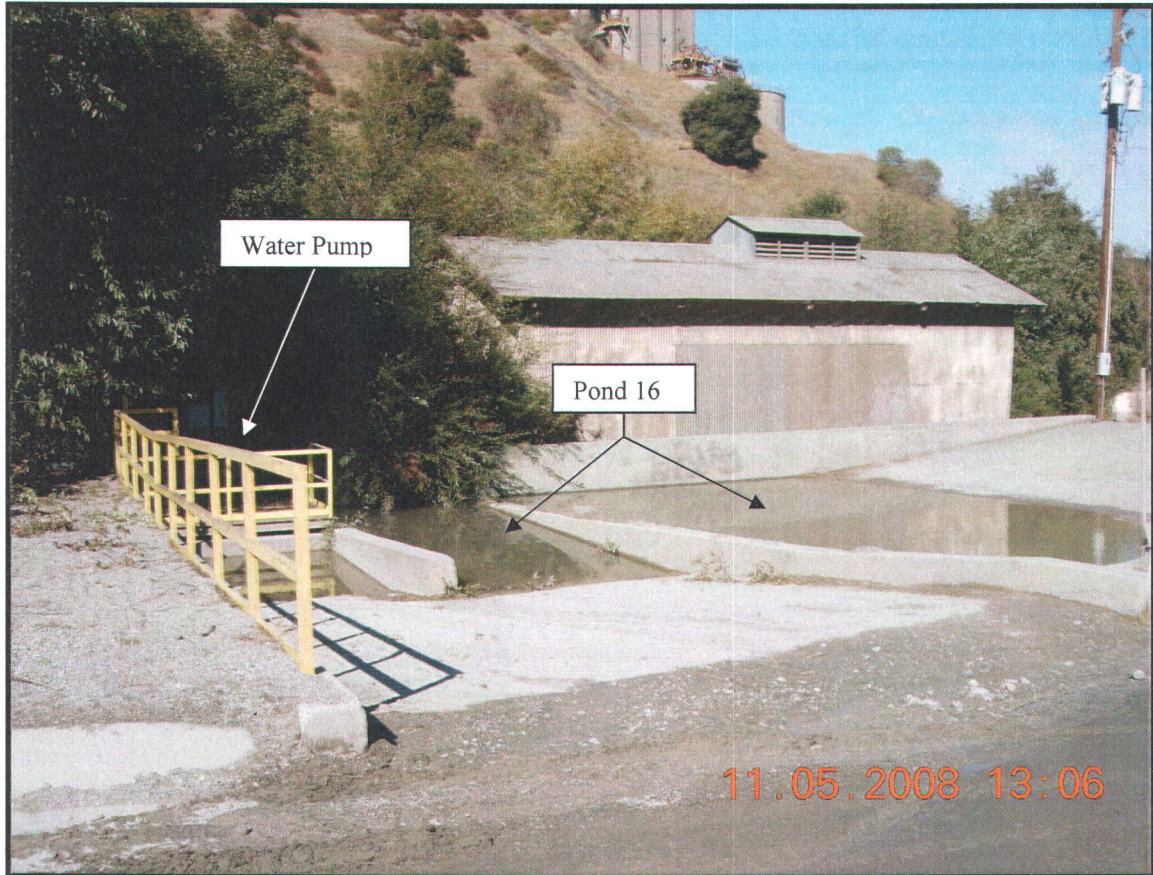
Current Condition: Pond 19 does not support vegetative growth. It typically has a few inches of sediment on the bottom along with approximately 6 inches of water. Because the truck washing station is in continual use, the rising water level activates the water pump several times each day.

CRLF Status: Based on surveys conducted by CRLF experts, the absence of vegetation or cover from predators, the shallow nature of the pond, and the continual operation of the water pump, HBG determined Pond 19 does not support suitable habitat for CRLF.

Studies:

- In 2006 and 2007 Rana Resources conducted full protocol surveys of all ponds and the results concluded CRLF were not present in Pond 19.

- The most recent survey of all the ponds was conducted on the night of July 30, 2008. The survey results concluded CRLF were not present within Pond 19.



Pond 16 (1,059 sq ft; 0.024 acre):

General Description/Design Capacity: Pond 16 was constructed as an open water sedimentation basin. It is a concrete structure with a water pump. It captures stormwater from operational roads and sheet flow from other impervious surfaces. The water pump within Pond 16 pumps water up hill to Pond 17. Pond 16 slopes toward the water pump from a depth up to approximately 3 feet near the water pump. The water pump keeps the water depth to a maximum of approximately 12 inches. Baseline design capacity is approximately 157 cubic yards. Pond 16 only receives water during storm events.

Current Condition: Pond 16 does not support vegetative growth. It typically has a few inches of sediment on the bottom along with approximately 12 inches of water during the winter. During the summer months the water evaporates and the pond becomes dry. During winter storm events the water level activates the water pump several times each day.

CRLF Status: Based on surveys conducted by CRLF experts, the absence of vegetation or cover from predators, the shallow nature of the pond, and the continual operation of the water pump during storm events, HBG determined Pond 16 does not support suitable habitat for CRLF.

Studies:

- In 2006 and 2007 Rana Resources conducted full protocol surveys of all ponds and the results concluded CRLF were not present in Pond 16.

- The most recent survey of all the ponds was conducted on the night of July 30, 2008. The survey results concluded Pond 16 was dry and CRLF were not present within Pond 16.



Pond 9 (10,688 sq ft; 0.25 acre):

General Description/Design Capacity: Pond 9 was constructed as an open water sedimentation basin. It was constructed in uplands and captures stormwater from operational roads and sheet flow from other impervious surfaces. It also captures sediment generated as a result of stormwater runoff from large piles of mine tailings directly adjacent to and northwest of Pond 9. Typically stormwater is retained within Pond 9 unless levels rise to design capacity. If water reaches the design capacity it will discharge through an overflow pipe directly into Permanente Creek. Pond 9 was constructed to an average depth of 7 feet with a baseline design capacity of approximately 2,771 cubic yards.

Current Condition: Pond 9 is a deep water pond with small patches of tules along the banks (refer to photograph). By the end of the winter/spring the accumulation of sedimentation within Pond 9 will reach its capacity, or near capacity, turning the pond into a very shallow, un-vegetated mudflat (similar to Pond 17 photo). Barriers to migration include daily truck and large earth-moving equipment traffic along the road between Pond 9 and Permanente Creek.

CRLF Status: No evidence of CRLF for Pond 9 has been found in any of the surveys. We also note the following conditions that tend to make Pond 9 poorly suited for CRLF: (1) the rapid accumulation of sediment each year which raises the bottom elevation from 7 feet to less than 1 foot over the course of several months; (2) the lack of vegetative

cover from predators; and (3) vehicle traffic along the road between Pond 9 and Permanente Creek. These factors produce unsuitable habitat conditions and inhibit the movement of frogs from suitable habitats to Pond 9.

Based on the survey results from CRLF experts, the design of the pond, rapid accumulation of sediment each year, and lack of cover from predators and barriers to migration from suitable habitat, HBG has determined that Pond 9 does not provide suitable habitat for CRLF.

Studies:

- In 2006 and 2007 Rana Resources conducted full protocol surveys of all ponds and the results concluded CRLF were not present in Pond 9.

- The most recent survey of all the ponds was conducted on the night of July 30, 2008. The survey results concluded CRLF were not present within Pond 9.



Pond 17 (13,532 sq ft; 0.31 acre):

General Description/Design Capacity: Pond 17 was constructed as an open water sedimentation basin. It was constructed in uplands and captures stormwater from operational roads and other impervious surfaces. The primary source of sediment comes from the discharge of water from the operational plant southwest of Pond 17. Water is detained in Pond 17 and eventually pumped to Pond 11 and not normally discharged into Permanente Creek. Pond 17 was constructed to an average depth of 15 feet with a baseline design capacity of approximately 7,518 cubic yards.

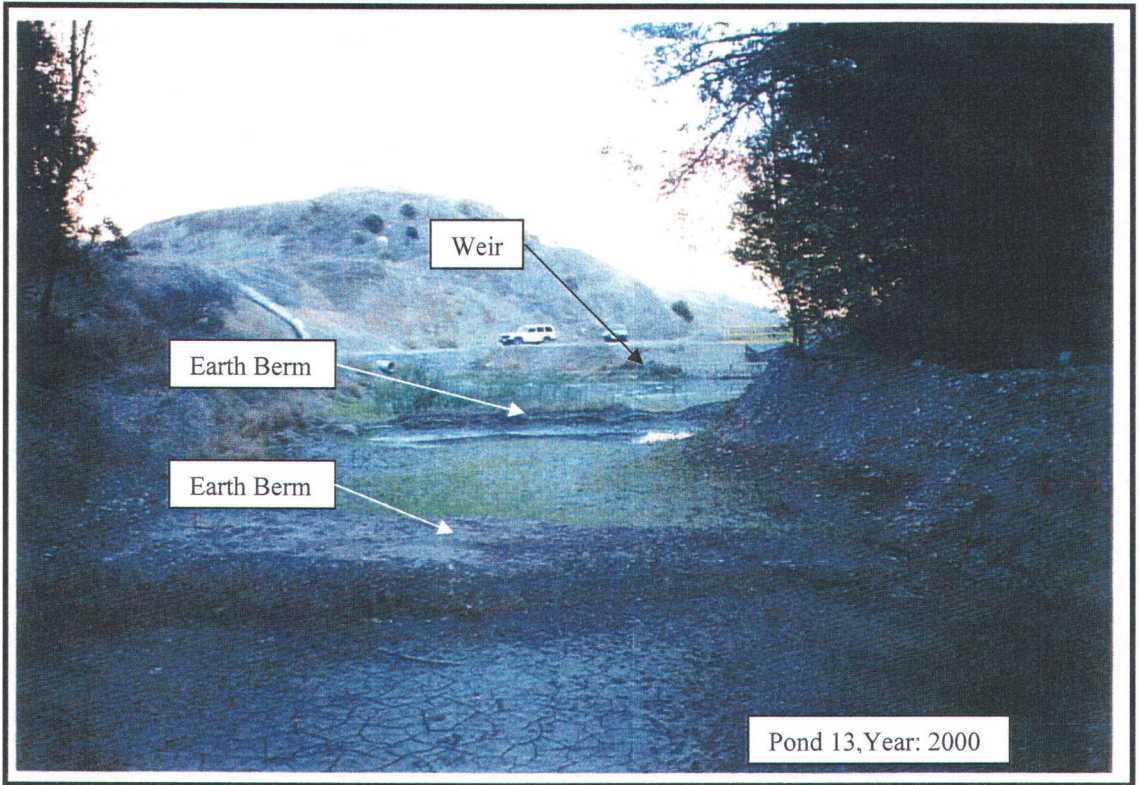
Current Condition: Pond 17 is a deep water pond with little or no vegetation along the banks. By the end of the winter/spring, the accumulation of sedimentation within Pond 17 will reach its capacity, or near capacity, turning the pond into a very shallow mudflat with little or no ponded water (refer to photograph). Barriers to migration include a constant flow of trucks moving between Pond 17 and Permanente Creek 24 hours a day, 5 days a week.

CRLF Status: Surveys conducted by CRLF experts have never observed a CRLF in Pond 17. Also, the following conditions that tend to make Pond 17 poorly suited for CRLF: (1) the rapid accumulation sediment each year which raises the bottom elevation from 15 feet to completely dry (except for isolated shallow ponding) over the course of several months; (2) the lack of vegetative cover from predators; and (3) barriers to migration from constant truck traffic along the road between Pond 17 and Permanente Creek. These factors produce unsuitable habitat and inhibit the movement of frogs to the pond from suitable habitat locations.

Based on the survey results from CRLF experts, the design of the pond, rapid accumulation of sediment each year, lack of cover from predators, and barriers to migration, HBG has determined that Pond 17 does not provide suitable habitat for CRLF.

Studies:

- In 2006 and 2007 Rana Resources conducted full protocol surveys of all ponds and the results concluded CRLF were not present in Pond 17.
- The most recent survey of all the ponds was conducted on the night of July 30, 2008. The survey results concluded CRLF were not present within Pond 17.



Pond 13 (33,118 sq ft; 0.76 acre):

General Description/Design Capacity: Pond 13 is an instream pond constructed as an open water sedimentation basin between 1983 and 1989 at the request of the SCVWD in order to improve stormwater management within Permanente Creek. Since the mid-1980s, maintenance activities have been permitted by the SCVWD and CDFG on Pond 13. Maintenance and bank stabilization activities on Pond 13 were permitted by the SFBRWQCB, Corps, CDFG and SCVWD in 2000. Since that time, however, no maintenance has been conducted due to concern over CRLF. As a result, Pond 13 has completely filled with sediment and is not currently functioning as designed.

Pond 13 is divided into three sections by two earthen berms to increase retention time and settlement efficiency (see 2000 photo). Pond 13 covers a total area of 33,118 square feet; the three individual sections of Pond 13 are 12,341 square feet, 8,708 square feet, and 12,068 square feet, respectively. Pond 13 is approximately 532 feet long and ranges from 26 to 80 feet wide with an average width of approximately 45 feet. During the sediment cleanout activities, Pond 13 is excavated to a maximum depth of approximately 16 feet below the top of the concrete weir located on the downstream edge of the pond. This corresponds to a depth of approximately 22 feet below the high water line. The depth of Pond 13 tends to decrease toward the upstream edge of the pond to a depth of approximately 10 feet. The baseline volume of Pond 13 is approximately 15,950 cubic yards (using an average depth of between 10 to 16 feet).

Current Condition: As shown on the photograph, Pond 13 has completely filled in with sediment and is no longer detaining stormwater or functioning as originally designed.

Herbaceous wetland vegetation and saturated soils dominate the central area with shrubs and trees dominating the outer boundary. A small area (approximately 50 sq feet; see photo) at the weir structure near the downstream terminus retains water and flows consistently for most of the year as a result of outflow from Pond 4A. However, the majority of Pond 13, as a result of the accumulation of sedimentation, does not pond or retain water for long durations after storm events. Relative to its current condition, with the exception of the small ponded area at the weir structure, the majority of Pond 13 does not pond water at a depth or duration long enough to support CRLF breeding habitat. Pond 13 is accessible to CRLF moving from suitable habitat areas and does provide cover, foraging and resting habitat for CRLFs.

To the extent that Pond 13 has developed wetland indicators, it is because maintenance activities have been delayed due to regulatory requirements resulting from the discovery of the presence of CRLF. The 2000 photo shown was taken prior to sedimentation removal activities that year. Please notice the lack of vegetation in 2000 compared to the current conditions (2008 Photo). When proper maintenance is performed, conditions would resemble what is shown in the 2000 photo.

CRLF Status: Because Pond 13 is in line with Permanente Creek, it does provide suitable habitat for CRLF. Based on studies conducted by CRLF experts, current and

past hydrologic and vegetative conditions, and proximity/hydrologic connection to Permanente Creek, Pond 13 is considered suitable habitat for CRLF and may provide small ponded areas suitable for breeding. The most recent surveys indicated, however, that no CRLF were present in Pond 13.

Studies:

- Radian International, LLC conducted a site assessment and field survey (day and night) for CRLF on September 25 and 26, 1997 (Radian International, LLC 1997). The study followed the February 18, 1997 U.S. Fish and Wildlife Service (USFWS) document, "Guidance on Site Assessment and Field Surveys of CRLF." The report concluded that Pond 13 provided potential CRLF habitat and breeding habitat.
- In 2000, a possible CRLF was observed in Pond 13 during a fish relocation effort on August 21, 2000 (Hagar Environmental Science 2000)
- In 2006 and 2007, Rana Resources conducted full protocol surveys of all ponds and concluded CRLF were present in Pond 13.
- The most recent survey of all the ponds was conducted on the night of July 30, 2008. The survey results concluded CRLF were not present within Pond 13 but that Pond 13 did provide suitable habitat.



Pond 13A (2,398 sq ft; 0.055 acre):

General Description/Design Capacity: Pond 13A was constructed as an open water sedimentation basin. It was constructed in uplands adjacent to and uphill of Pond 13B. It captures sediment generated as a result of stormwater runoff from large piles of mine tailings directly adjacent to and northwest of the pond. Typically, stormwater is retained within Pond 13A and/or slowly perks through the pervious gravel and sand soils. If levels rise to design capacity they will discharge through an overflow pipe directly into Pond 13B. Pond 13A was constructed to an average depth of 11 feet with a baseline design capacity of 977 cubic yards.

Current Condition: Pond 13A is unvegetated except for a small 15 square foot patch of tules and willows in the southwestern most corner of the pond. The banks are steep (2:1 slope) and are comprised of sandy/gravel soils. Pond 13A does retain water for long periods after rain events but typically will dry out during the summer. Large piles of mine tailings directly adjacent to the pond deposit rock, gravel and sand into the pond each winter. Additionally, a large culvert discharges stormwater into Pond 13A generated from mining operations above the pond. Barriers to migration include trucks and large earth-moving equipment which travel along the road between Pond 13A and Pond 13 on a daily basis. In addition, a 100 foot pile of sparsely vegetated mine tailings creates a migration barrier between the Pond 13A and Pond 13.

CRLF Status: Surveys conducted by CRLF experts have never observed a CRLF in Pond 13A. We also note the following conditions that tend to make Pond 13A poorly

suitable for CRLF: (1) the rapid accumulation sediment each year; (2) the lack of vegetative cover from predators; (3) the short duration of ponding; (4) steep un-vegetated slopes between Pond 13A and Pond 13 and (5) vehicle traffic along the road between Pond 9 and Permanente Creek. These factors produce unsuitable habitat and inhibit the movement of frogs from suitable habitat to Pond 13A.

Based on the survey results from CRLF experts, lack of ponding for long durations, rapid accumulation of sediment each year, lack of vegetation for foraging, resting, and protection from predators, and barriers to migration from suitable habitat, HBG has determined that Pond 13A does not provide suitable habitat for CRLF.

Studies:

- In 2006 and 2007, Rana Resources conducted full protocol surveys of all ponds and the results concluded CRLF were not present in Pond 13A.
- The most recent survey of all the ponds was conducted on the night of July 30, 2008. The survey results concluded that Pond 13A was dry and CRLF were not present.



Pond 13B (563 sq ft; 0.013 acre):

General Description/Design Capacity: Pond 13B was constructed as an open water sedimentation basin. It was constructed in uplands and captures sediment generated as a result of stormwater runoff from large piles of mine tailings directly adjacent to and northwest of the pond. It also acts as a secondary sedimentation basin for overflow water from Pond 13A. The overflow pipe from Pond 13A flows into Pond 13B. Typically, stormwater is retained within Pond 13B and/or slowly perks through the pervious gravel and sand soils. If water levels rise to design capacity they will discharge through an overflow pipe directly into Pond 13. Pond 13B was constructed to an average depth of 10 feet with a baseline design capacity of approximately 209 cubic yards.

Current Condition: Pond 13B is unvegetated with steep (2:1 slope) sandy/gravel banks. It does not retain water for long periods after storm events. The gravel and sand soils allow stormwater to perk through the soils. Pond 13B will dry within a few weeks after a storm event and is completely dry during the summer. Large piles of mine tailings directly adjacent to the pond deposit rock, gravel, and fine sediment into the pond each winter. Barriers to migration include trucks and large earth-moving equipment which travel along the road between Pond 13B and Pond 13 daily. In addition, a 100-foot pile of sparsely vegetated mine-tailings at a 2:1 slope acts as a barrier to migration between Pond 13B and Pond 13. The vehicle traffic and steep slope leading up to Pond 13B would pose a significant barrier to migration for CRLF moving from suitable habitat.

CRLF Status: Surveys conducted by CRLF experts have never observed a CRLF in Pond 13B. Also, the following conditions that tend to make Pond 13B poorly suited for

CRLF: (1) the rapid accumulation sediment each year which raises the bottom level; (2) the lack of vegetative cover which provides foraging, resting and protection from predators; (3) the short duration of ponding; (4) steep un-vegetated slopes between Pond 13B and suitable habitat; and (5) vehicle traffic along the road between Pond 13B and Pond 13. These factors together produce an environment that is unsuitable habitat for CRLF.

Based on the survey results from CRLF experts, lack of ponding for long durations, rapid accumulation of sediment each year, lack of vegetation for foraging, resting, and protection from predators, and barriers to migration from suitable habitat, HBG has determined that Pond 13B does not provide suitable habitat for CRLF.

Studies:

- In 2006 and 2007, Rana Resources conducted full protocol surveys of all ponds and the results concluded CRLF were not present in Pond 13B.

- The most recent survey of all the ponds was conducted on the night of July 30, 2008. The survey results concluded that Pond 13B was dry and CRLF were not present.



Pond 4A (3,326 sq ft;0.076 acre) :

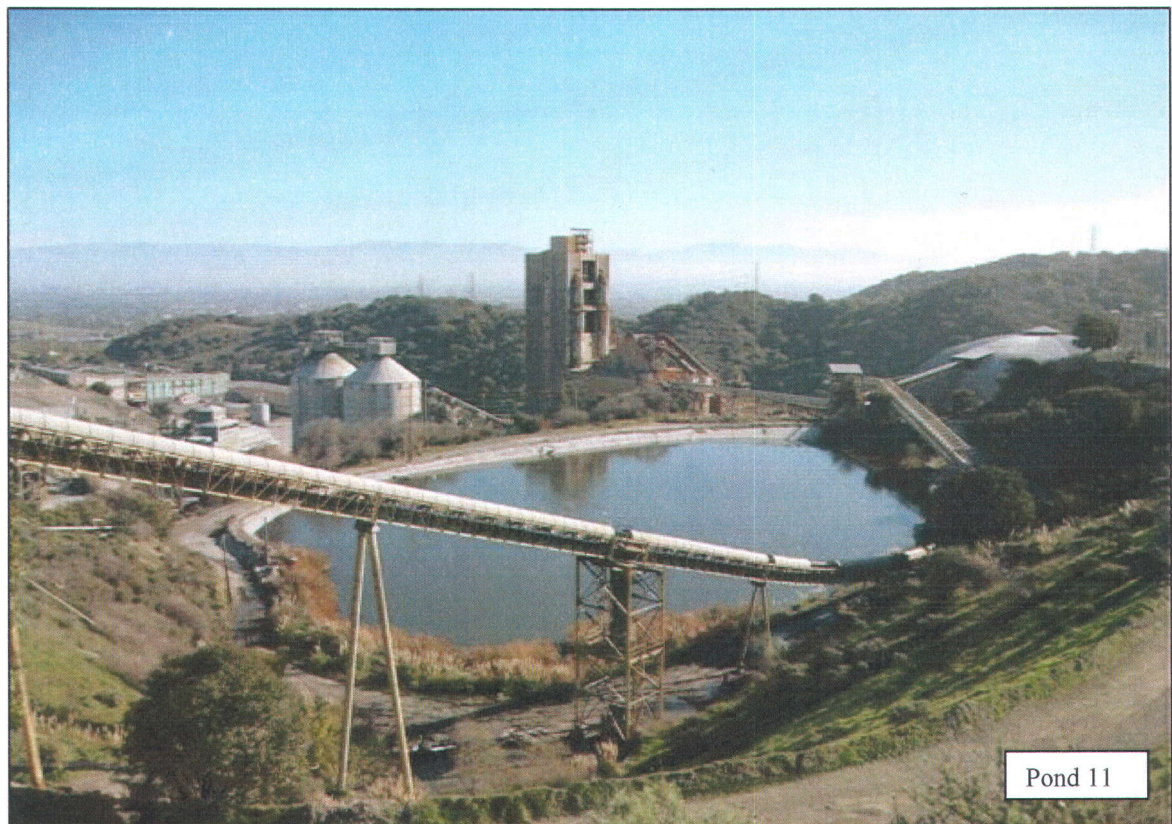
General Description/Design Capacity: Pond 4A was constructed as an open water sedimentation basin. It is the western most sedimentation pond situated between steep, large piles of mine-tailings (predominately large rocks and boulders) and a quarry access road. It is designed to capture and detain stormwater discharging from the adjacent mine-tailings and serves as the sedimentation basin for the water pumped out of the pit lake via the inflow pipe before discharging into Permanente Creek above Pond 13. Water is pumped from the pit lake to Pond 4A throughout most of the summer and into late fall. Once the water level reaches the design capacity, excess stormwater will discharge into the overflow pipe directly to Permanente Creek. Pond 4A was constructed to an average depth of 4 feet with a baseline design capacity of approximately 862 cubic yards.

Current Condition: As shown in the photo, Pond 4A is an open water pond with herbaceous vegetation and mine-tailings around the banks. The current depth of the pond is unknown but is at least deep enough to limit the establishment of emergent vegetation to the area near the overflow pipe. Pond 4A is accessible to CRLF moving from suitable habitat areas and does provide cover, foraging, and resting habitat for CRLFs.

CRLF Status: Based on surveys conducted by CRLF experts, current hydrologic and vegetative conditions, proximity to Permanente Creek, and minimal barriers to migration from suitable habitat, HBG determined Pond 4A may provide suitable habitat for CRLF. This analysis is based on the assumption that the stretch of Permanente Creek adjacent to Pond 4A is suitable habitat or may be used as a movement corridor for CRLF.

Studies:

- In 2006 and 2007, Rana Resources conducted full protocol surveys of all ponds and the results concluded CRLF were not present in Pond 4A.
- The most recent survey of all the ponds was conducted on the night of July 30, 2008. The survey results concluded CRLF were not present within Pond 4A but that Pond 4A did provide suitable habitat.



Pond 11/Lake (134,841 sq ft; 3.1 acre):

General Description/Design Capacity: Pond 11 was constructed as an open water sedimentation basin within the central portion of the mining and processing operations. It was constructed in uplands and was designed to provide and retain water for the Finishing Mills Process. Water is retained in Pond 11 and is not hydrologically connected to Permanente Creek. Pond 11 was constructed to an average depth of 30 feet with a baseline design capacity of approximately 149,835 cubic yards.

Current Condition: Pond 11 is a deep water pond. The northern and eastern banks are lined with concrete with no vegetation. The southern and western banks are not entirely lined with concrete and have established vegetation along the top of the bank and slope of the bank where sedimentation has accumulated. Its primary purpose is to provide and retain water for use in the Finishing Mills process. It does not accumulate large amounts of sedimentation during a normal year. Barriers to migration between Pond 11 and the nearest suitable habitat are significant and include heavily used roadways, numerous structures, and large piles of sparsely vegetative mine-tailings. The large piles of mine-tailings are steep (2:1 slope in many areas) and rise in elevation of upward of 200 feet relative to the nearest suitable habitat.

The aerial photograph provided in this report illustrates the significant barriers (topographic barriers, roads/industrial operations, mine tailings) between suitable habitats and Pond 11.

CRLF Status: Surveys conducted by CRLF experts have never observed a CRLF in Pond 11. This may be the result of several factors including (1) significant barriers to migration from the nearest suitable habitat; (2) marginal emergent vegetation habitat along banks; and (3) water quality as a result of operational process (possible PH not suitable for CRLF). These factors produce unsuitable habitat and inhibit the movement of frogs to the pond from suitable habitat locations.

Based on the survey results from CRLF experts, the design and operational use of the pond, and significant barriers to migration, HBG has determined that Pond 11 does not provide suitable habitat for CRLF and that it is unlikely that CRLF could access the pond from adjacent suitable habitats.

Studies:

- In 2006 and 2007, Rana Resources conducted full protocol surveys of all ponds and the results concluded CRLF were not present in Pond 11.
- The most recent survey of all the ponds was conducted on the night of July 30, 2008. The survey results concluded CRLF were not present within Pond 11.



