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May 8, 1998

Richard Procnier (SFD 7-2)  
U.S. Environmental Protection Agency, Region 9  
75 Hawthorne Street  
San Francisco, California 94105

Re: Atlas Mine Site Inspection, April 15, 1998

*Compare our  
final plans  
to BLM to see  
for maintain*

Dear Richard:

This letter documents the April 15, 1998, inspection of the Atlas Mine site. It lists and discusses my observations of items at the site that need to be addressed to ensure that the remedial action is maintained properly. **Many items will require major design and construction.** Action is required on the following items at the site:

*BLM*

*OK*  
*OK*  
*OK*  
*OK*

- ① The perimeter fencing at the Spanish Lake/BLM gate needs to be repaired, reinforced, and extended.
- ② The BLM warning sign at the Spanish Lake/BLM gate needs to be changed.
- 3) Fencing near the upper site gate needs to be repaired, reinforced, and extended.
- ④ A fallen tree needs to be removed from the upper access road.
- ⑤ Pond A needs to be inspected when the road reopens.
- 6) Sediments in Pond B need to be removed.
- 7) Sediments in Pond C need to be removed and the drainage pipe leading to the pond needs to be cleared.
- 8) The drainage system to Pond C needs redesign and reconstruction.
- 9) The upper access road runoff crossing needs to be re-engineered.
- 10) The drainage culvert under the road near the upper site gate needs to be cleared and the ditches feeding the pipe need to be re-engineered.
- 11) Ditches near the entrance to the road to Pond B need to be re-engineered.
- 12) The entrance to Diversion Channel B needs redesign and reconstruction.
- 13) Roads onsite need repair and repavement in several locations.
- 14) The road to the Rover Pit needs redesign and reconstruction, and a drainage system needs to be designed and constructed to prevent further damage.
- 15) The revegetation effort needs to be re-evaluated.

### About the Inspection

The goal of the inspection was to observe and document current site conditions after the recent rains. I was accompanied on this joint inspection by you, Frank Lopez of the California

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Department of Toxic Substances Control, and Tim Moore of the Bureau of Land Management (BLM).

We inspected fencing, gates, ponds, diversion channels, drainage ditches, access roads and revegetated areas. The following paragraphs summarize my observations of the items on site that need further action. Figure 1 indicates the general locations of these 15 areas of concern. Photographs taken during the inspection are also attached.

### **Discussion of Action Items**

#### **1) Spanish Lake/BLM Gate**

Upon our arrival, we found all of the site access gates appropriately locked, with one exception. The Spanish Lake/BLM gate in the northeastern part of the site was locked, but the chain had been cut and fitted with an additional unauthorized lock, possibly placed there by utility crews seeking a shortcut through the site. Tim Moore removed the unauthorized lock and resecured the gate.

Even though the perimeter gates were locked, there was evidence of unauthorized site entry by motorcyclists, who apparently maneuvered around the gates through various weak points in the fence. We observed recent motorcycle tracks on most of the roads onsite, including the roads to Ponds A and B, the road to the Spanish Lake/BLM gate, and the main road below Pond C (see Photos 00, 0, 1, 2, 10, 11, and 21).

We noted motorcycle tracks through the fence just east of the Spanish Lake/BLM gate (see Photos 0, 1, and 2). The fence was damaged, at least one of the posts downed, and the wires loose so that access to the site was easily accomplished either over or under the wires.

**Action Required:** The perimeter fencing at the Spanish Lake/BLM gate needs to be repaired, reinforced, and extended to control site access effectively.

#### **2) Upper Site Gate**

We also noted motorcycle tracks through and around the fence near the upper site gate. The fence was damaged on the east side of the gate, allowing access over or under the wires. On the west side of the gate the fence does not extend far enough to control access, as we noted motorcycle tracks through the bushes around the end of the fence (see Photo 00).

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**Action Required:** Near the upper site gate, the fence needs to be reinforced and repaired on the eastern side and it needs to be extended farther on the western side to provide additional site access restriction.

#### **3) BLM Warning Sign**

The warning sign posted at the Spanish Lake/BLM gate cites an outdated phone number for the BLM (see Photo 1). Tim Moore noted that it needs to be revised.

**Action Required:** The phone number for BLM needs to be corrected on the warning sign.

#### 4 ) Fallen Tree

A fallen tree across the upper access road prevented us from driving up to see Pond A (see Photo 11).

**Action Required:** The tree needs to be removed from the road to ensure through travel to Pond A.

#### 5) Inspection of Pond A

We were unable to inspect Pond A during this visit because a fallen tree blocked the upper access road.

**Action Required:** Pond A needs to be inspected when the tree is removed and the upper access road is reopened.

#### 6) Sediments in Pond B

Sediments in Pond B have increased significantly since the January 15, 1998, inspection (see Photo 7 and Photo 22—Series 333; also compare Photo 7 with Photo 18A from the January inspection). Tim Moore pointed out that the marker post in Pond B is inadequate to measure the sediment level of the pond. Visual inspection indicates the sediment accumulation has exceeded the maximum sediment elevation for Pond B.

Sediments in Pond B need to be removed. In addition, a viable indicator of the level of sediments in the pond needs to be designed and implemented, or the pond needs to be cleaned out on a routine basis, at intervals scheduled frequently enough that sediment accumulation is controlled. To ensure that sediment removal is done properly, as-built drawings of Pond B will be needed, and they should be incorporated in the Operations & Maintenance Plan.

**Action Required:** Sediments need to be removed from Pond B because they appear to have exceeded the maximum sediment elevation for which the pond was designed. A method to gauge and/or control sediment accumulation in the pond needs to be designed and implemented.

#### 7) Sediments in Pond C

Sediments in Pond C have also increased significantly since the January 15, 1998, inspection (see Photos 18 and 19—Series 347). Visual inspection indicates the sediment accumulation has exceeded the maximum sediment elevation for Pond C, and sediments need to be removed.

Since the January 15, 1998, inspection, sediments have again clogged the drainage pipe that passes under the road and empties into Pond C. During our visit on April 15, 1998, we noted that although the northwestern end of the pipe was mostly clear, the southeastern end was buried so deep in sediments that it was not visible (see Photos 17, 18, and Photo 19—Series 347). Until a permanent solution is designed and implemented to prevent sediment buildup in the drainage pipe, there is an immediate need to clear the clogged piping and continue to monitor its status frequently to maintain unimpeded flow.

In addition, a viable indicator of the level of sediments in Pond C needs to be designed and implemented, or the pond needs to be cleaned out on a routine basis, at intervals scheduled

frequently enough that sediment accumulation is controlled. To ensure that sediment removal is done properly, as-built drawings of Pond C will be needed, and they should be incorporated in the Operations & Maintenance Plan.

**Action Required:** The drainage pipe that empties into Pond C needs to be cleared immediately. Additional sediments need to be removed from Pond C because they appear to have exceeded the maximum sediment elevation for which the pond was designed. A method to gauge and/or control sediment accumulation in the pond needs to be designed and implemented.

### 8) Drainage System to Pond C

The swift buildup of sediments clogging the drainage pipe to Pond C indicates that the existing drainage system is inadequate to handle effectively the current flow into Pond C. To address this problem, consideration should be given to extending the drainage pipe further out into the pond. Other engineering controls such as resetting the drainage pipe at a steeper incline to the pond may be warranted.

The drainage ditch north of Pond C, along the road between Pond E and Pond C is also ineffective in channeling site runoff. Although a portion of the ditch was repaired late last year, as was noted in the January 15, 1998, inspection, the repair did not extend far enough. Just below the repaired section, runoff has breached the ditch, crossed the road, and has caused road damage. The damage is significantly greater than was observed during the January 15, 1998, inspection (see Photos 13, 14, 15, 16, and 22—Series 347).

To prevent further damage and washout of the road, repair of the ditch needs to be performed so that the flow is contained all the way to the drainage pipe. An additional drainage pipe may also need to be installed under the road uphill from the existing pipe.

**Action Required:** To prevent sediment buildup in the drainage pipe that leads to Pond C, the position and extent of the pipe needs to be redesigned and re-engineered. To prevent further damage to the road, the drainage system to Pond C needs to be redesigned and reconstructed.

### 9) Upper Access Road Runoff Crossing

The runoff crossing ditch along the upper access road to Pond A was originally designed to convey some of the runoff across the road and downhill to Channel A. The crossing ditch does not appear to function optimally, however, because the ditch that follows the road is too deep at its confluence with the crossing ditch such that runoff would be diverted only in extreme cases of flooding (see Photo 9). Diverting more of the runoff at this junction is desirable because the drainage system further downslope is inadequate to handle the total amount of runoff that flows along the north side of the upper access road (see Item 10 below).

**Action Required:** To reduce the amount of flow through the ditch that follows the upper access road, the crossing ditch needs to be re-engineered to divert more runoff.

### 10) Drainage at the Upper Site Gate

The drainage system at the upper site gate is inadequate to control the amount of runoff that flows along the north side of the upper access road. The culvert under the main road at the

upper site gate is so clogged that only a small portion of the top rim of the corrugated pipe was visible during our inspection. Site runoff has consequently damaged the road by cutting new channels just south of the culvert (see Photos 3, 4, and 12). Richard Procnier, Frank Lopez, and Tim Moore cleared some of the larger rocks that were blocking the drain. Additional work needs to be performed to clear the drain.

**Action Required:** The drainage culvert that passes under the road needs to be cleared. To prevent the system from becoming clogged in the future, flow through this drainage system needs to be reduced (see Item 9 above) or the pipe and the ditches that feed the pipe need to be re-engineered to handle a heavier flow.

### 11) Drainage Ditches Along the Road to Pond B

The drainage ditch that crosses the road at the entrance gate to Pond B appears to continue to be effective; however, site runoff has caused damage to the road slightly west of the gate by cutting new drainage channels across the road (see Photo 21). This area needs to be addressed to ensure the road to Pond B remains accessible.

**Action Required:** The drainage ditches in the area west of the entrance gate to the road to Pond B need to be re-engineered to prevent further road damage.

### 12) Road Repair and Repavement

As noted in previous sections, inadequate drainage systems have allowed runoff to cause damage to access roads throughout the site. We observed road damage on the main road just below the upper site gate (50 to 75 feet) (see Photos 3, 4, and 12), the road to Pond B just west of the gate (approximately 10 feet) (see Photo 21), the road between Pond E and Pond C (50 to 100 feet) (see Photos 13, 14, 15, and 16), and the road below Pond C (50 to 100 feet) (see Photo 22—Series 347).

**Action Required:** An estimated 50 to 75 feet of road needs to be repaved on the main road just below the upper site gate. An estimated 10 feet of road needs repair just west of the gate to Pond B. An estimated 50 to 75 feet of road needs to be repaved between Pond E and Pond C. An estimated 50 to 75 feet of road needs to be repaved on the main road below Pond C.

### 13) Construction of Road to Rover Pit

Site runoff has caused significant damage to the road to the Rover Pit. The road is washed out in places and is no longer passable by car or truck (see Photos 23 and 25). Construction is needed immediately to rebuild the road and install an appropriate drainage system to prevent further damage. According to Tim Moore, vehicle access is required to the Rover Pit by August of this year in order to prepare the new areas for revegetation. Failure to re-establish the access road here by August will delay the third phase of the site revegetation project.

**Action Required:** The road to the Rover Pit needs redesign and reconstruction where runoff has caused it to collapse. A drainage system needs to be designed and constructed to handle runoff so that the newly reconstructed road does not become damaged.

#### **14) Diversion Channel B Repair**

The erosion noted during the inspections on November 1, 1997, and January 15, 1998, at the entrance to Diversion Channel B remains unrepaired (see Photo 20). Recent rains appear to have caused additional damage. The bed of the lower part of the channel is lined with rock "mattresses" or rock gabions. Consequently, the lower part is more stable than the upper part of the channel. Damage to the entrance to the channel needs to be repaired. Consideration should be given to extending the liner of rock mattresses all the way to the top of the channel to increase stability there. Other engineering controls such as installing a culvert under the road may also be warranted.

As was also noted during the January 15, 1998, inspection, there is slumping from the embankment along Diversion Channel B about 100 yards below top of the channel (see Photo 19 from Series 333 and Photo 20). Even with the recent heavy rainfall, however, the amount of slumping does not appear to have increased appreciably since the last inspection. This area should continue to be monitored closely during future inspections.

**Action Required:** The entrance to Diversion Channel B needs to be repaired and re-engineered to protect against erosion. Slumping from the embankment along Diversion Channel B needs to be monitored during future inspections to ensure that conditions do not worsen significantly.

#### **15) Revegetation Efforts**

The second phase of revegetation at the Atlas Mine site included 7 acres near Ponds B and E, and according to Tim Moore, was completed last December almost exactly as planned. We noted that some of the plants are growing, but it is too early to tell whether they will survive (see Photos 5, 7, and 8). We did not observe much, if any, vegetative growth associated with the hydroseeding in these areas.

The areas that were planted during Phase I (approximately 4½ acres near Ponds C, D, and G) are not flourishing, although we did observe a few examples of volunteer growth (see Photos 00, 3, and 4). Many of the plants do not appear to have survived. Neither did we observe much, if any, vegetative growth associated with the hydroseeding in these areas.

Overall, the results of the revegetation efforts do not appear commensurate with the amount of time and money expended to date. According to Tim Moore, the cost for hydroseeding is approximately \$24,000 per acre and each plant cost about \$5. Steps need to be taken to re-evaluate the revegetation effort to determine if a higher success rate can be achieved.

**Action Required:** The revegetation effort needs to be re-evaluated to determine if another approach may prove more successful.

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If you have any questions about this letter or our observations during the site inspection, please call me at (415) 981-2811.

Sincerely,

A handwritten signature in cursive script that reads "Karen Ladd".

Karen Ladd

Attachments

cc: Frank Lopez, Cal/EPA DTSC  
Richard Blubaugh, Atlas Corporation  
Tim Moore, BLM  
Kara Christenson, U.S. EPA Region 9

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