

# Callahan Mine Superfund Site

## Remedial Investigation Field Work to Continue

Community Update  
June 2006

Since the release of the July 2005 Community Update and the August 9, 2005 public meeting, the United States Environmental Protection Agency (EPA), Maine Department of Environmental Protection (Maine DEP), and Maine Department of Transportation (MaineDOT) continue to make progress at the Site. MaineDOT is taking the lead in the implementation of the Remedial Investigation and Feasibility Study (RI/FS) under the oversight of EPA and Maine DEP.

### Remedial Investigation Program

In 2005, the MaineDOT completed a comprehensive Work Plan to perform the RI/FS at the Callahan Mine Site. A substantial portion of the activities outlined in the Work Plan was completed in 2005. A report entitled "Phase 1A Remedial Investigation Report" contains a detailed description of the activities performed and the results of the investigations. This Report is currently undergoing review by EPA, Maine DEP, and the consultant for the Technical Assistance Grant (TAG) at the Site, Maine Environmental Research Institute (MERI).

This summer, contractors working for MaineDOT will continue the RI/FS investigation activities at the Site. The major focus of the work will be to evaluate subsurface conditions in the waste areas, assess the hydrogeologic conditions and evaluate the quality of the groundwater. Figure 1 shows the major waste areas and surface water features at the Callahan Mine. Figures 2 and 3 show the locations of the field work to be performed during 2006, including the locations for monitoring wells.

The approximate schedule for these activities is listed below:

- Site activity began May 30 2006.
- A geophysical survey was performed during early June 2006.

### Callahan Mine Superfund Site Public Information Meeting

Thursday  
July 6, 2006  
7:00 p.m.

Brooksville Public Service Building Meeting  
Room

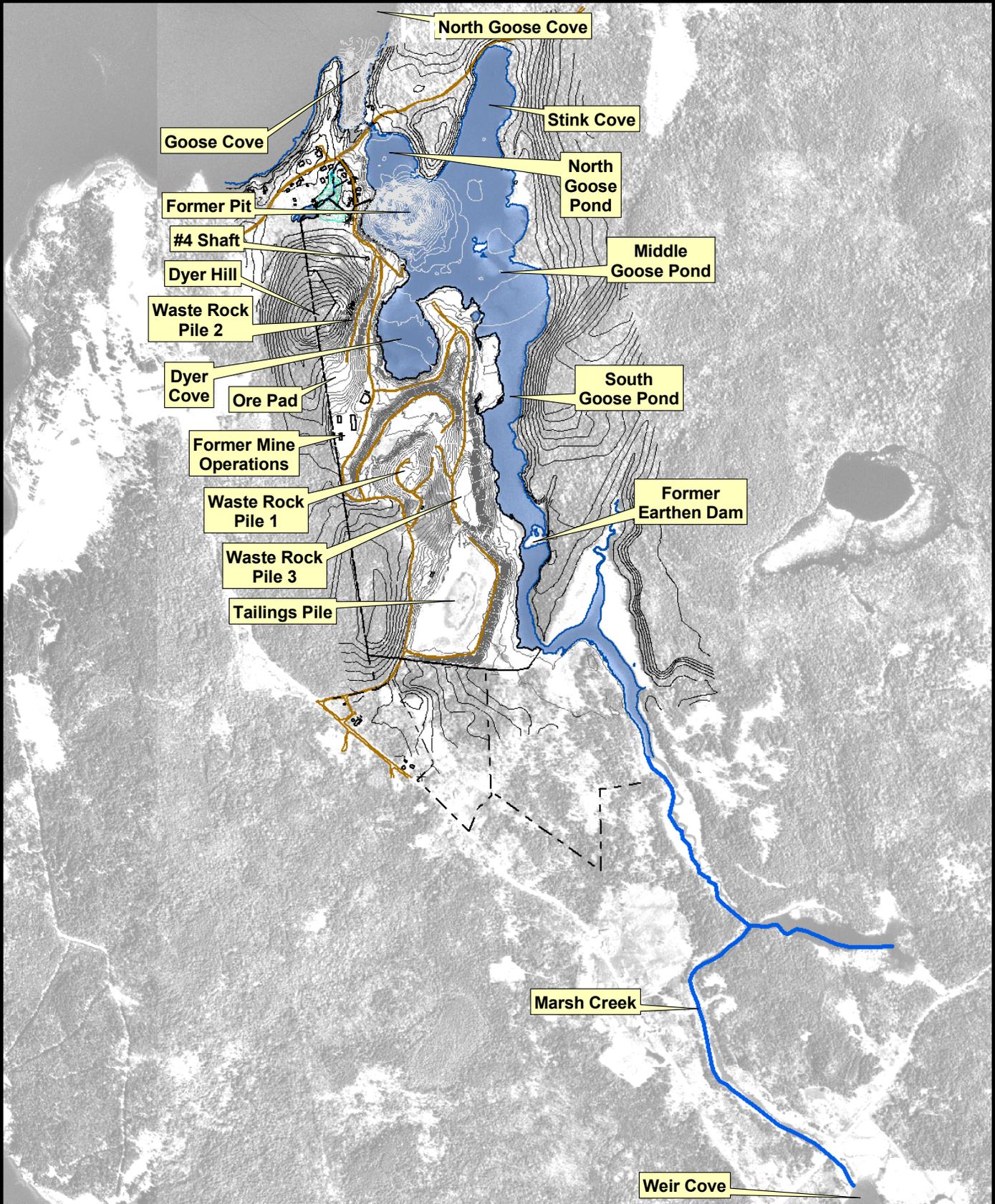
1 Town House Road  
Brooksville, ME 04617

**Please come and visit with the EPA,  
Maine DEP, and Maine DOT to discuss  
the project.**

- Drilling, to evaluate subsurface conditions and the installation of monitoring wells, began June 6 and will extend through July 2006.
- A preliminary geotechnical investigation of the Tailings Pile will occur in late June/early July 2006.
- Groundwater sampling, using the newly installed monitoring wells, is expected to occur in August and October/November 2006.
- Evaluation of the hydrogeologic properties of the Site will be performed in August 2006.

**In addition to the activities described above, there will likely be field activities to better refine the ecological and human health risk assessments, by collecting additional samples for tissue and toxicity evaluation. The extent of these studies will be defined after the review of the "Phase 1A Remedial Investigation Report" and the upcoming draft Baseline Ecological Risk Assessment Report. A lobster sampling program that began in 2005 will also be completed in 2006.**

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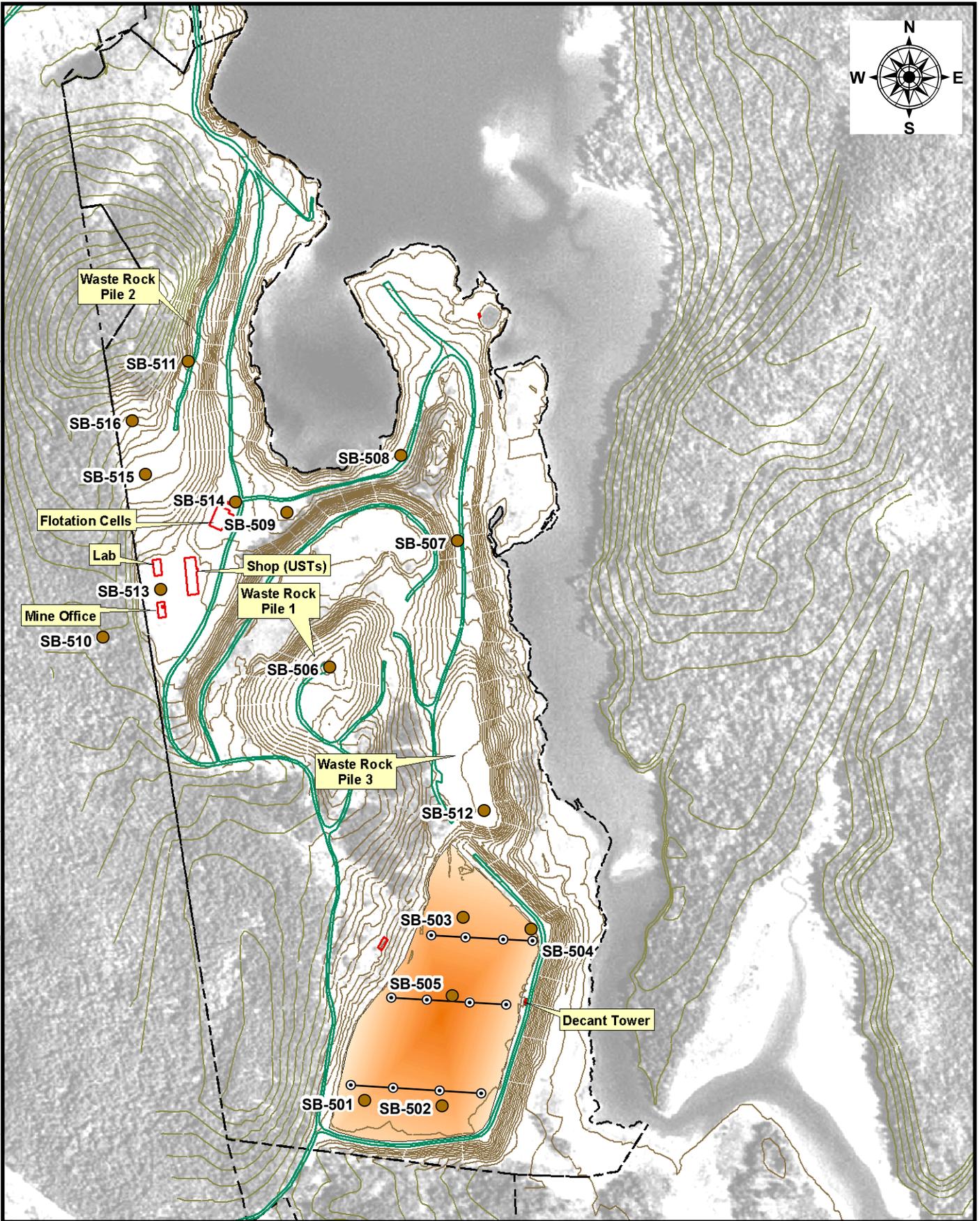
**Legend**

- Marsh Creek
- - - Property Line
- Bathymetric Contour

0 625 1,250 Feet

Prepared by BRP Checked by PSB

**Figure 1**  
**Existing Conditions and Site Areas**  
 Callahan Mine Superfund Site  
 Brooksville, Maine  
 MACTEC, Inc.



**MACTEC**  
Engineering and Consulting

Prepared by BRP | Checked by PSB

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Feet

Job No. 3612052031/4 June 21, 2005

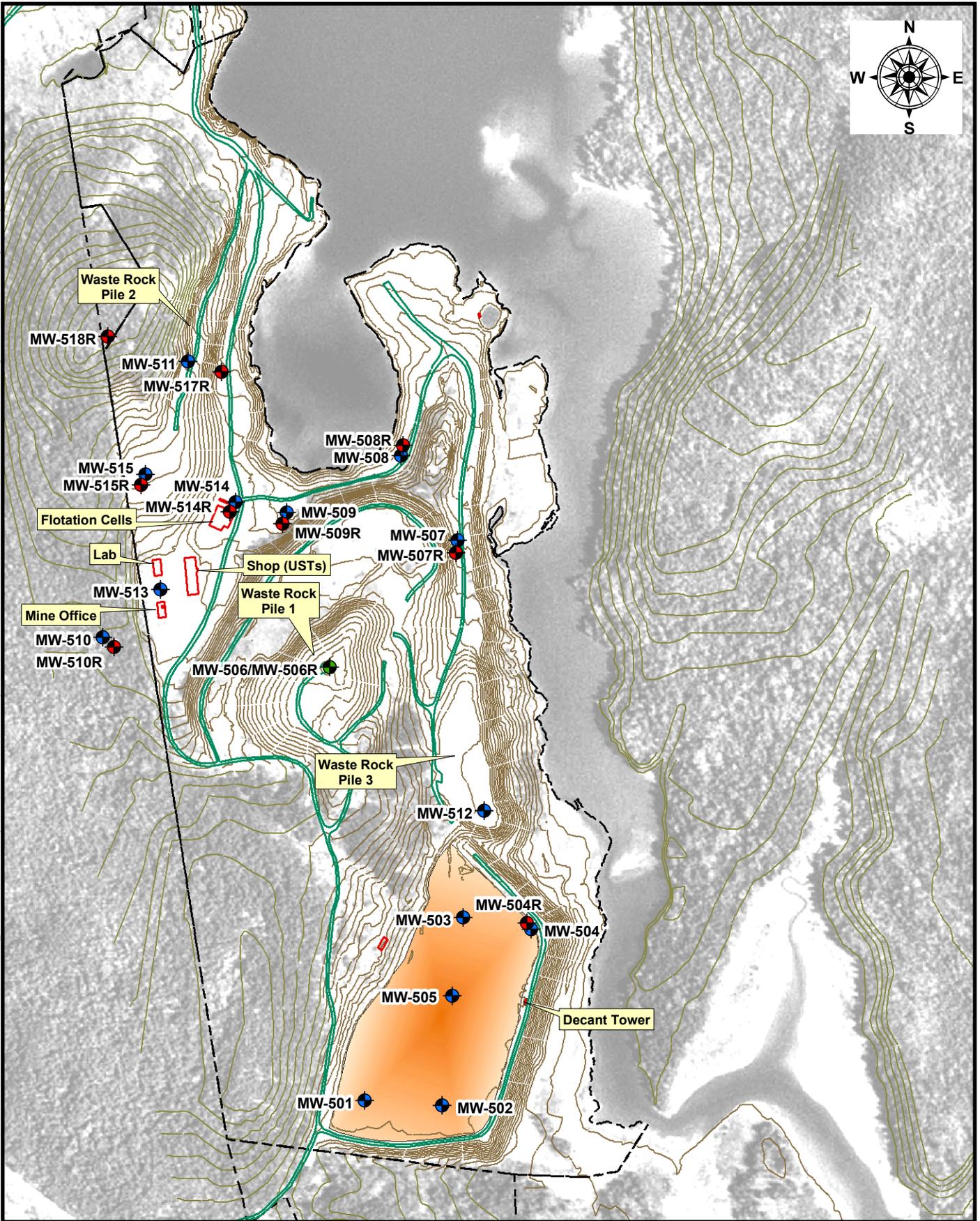
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**Legend**

- Proposed Soil Boring
- CPT Boring (Estimated Number of Locations)

**Figure 2**  
*Proposed Cone Penetration Boring and Soil Boring Program*

*Callahan Mine Interim Work Plan II*



**MACTEC**  
Engineering and Consulting

Prepared by BRP | Checked by PSB

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Feet

Job No. 3612052031/4 June 21, 2005  
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**Legend**

- ◆ Proposed Bedrock Well Location
- ◆ Proposed Multi-Level Well Location
- ◆ Proposed Overburden Well Location

**Figure 3**  
*Proposed Overburden Well and Bedrock Well Program*

*Callahan Mine Interim Work Plan II*

## Phase 1A Remedial Investigation Report

The "Phase 1A Remedial Investigation Report" contains a description of the field studies performed during 2005 and presents an updated characterization of the extent of contamination at the site. A summary of the field program performed in 2005 along with the preliminary conclusions is presented below.

Surface soil and sediment sampling was performed to meet several objectives:

- Identify the contaminants that are present at the Site;
- Define the extent and concentration of the contaminants;
- Provide data to support the development of a Human Health and Ecological Risk Assessment;
- Support the identification of areas that require further study; and
- Refine the conceptual model that describes where contamination is located and how contamination is being transported away from the Site.

To meet these objectives, the following activities were performed:

- Two hundred and eight surface soil samples were collected from 189 locations across the Site. Over half (117 samples) were collected along 11 transect lines to evaluate the presence of contamination in the forested areas adjacent to the Site. A few samples were also collected to better define background levels of contaminants that are naturally occurring. The remaining samples were used to refine the contaminant distribution in the areas within the Site, including the wetland and floodplain areas. All of the samples were analyzed for metals using an on-site instrument with about ten percent of the samples being sent for off-site confirmation analysis. Six samples from the Mine Operations area were also sampled for polychlorinated biphenyls (PCBs).

- Five hundred and sixty four sediment samples were collected from 140 locations. Goose Pond, Goose Cove, Marsh Creek, and Weir Cove comprised the study areas for this sampling. All of the samples were analyzed for metals using an on-site instrument with about seven percent of the samples being sent for off-site confirmation analysis. An additional 14 samples were collected from Horseshoe Cove to define background levels for the sediment contaminants.
- Twelve sediment samples were collected at the beginning of the program to check for the presence of other contaminants including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides and PCBs.
- Twenty-five sediment samples were collected for off-site analysis as part of the ecological risk biota assessment program.
- Thirteen surface water samples were obtained from areas of seepage along the waste areas at the Site.
- Fifteen surface water samples were collected from Goose Pond, Goose Cove, and Marsh Creek along with five background surface water samples from Horseshoe Cove. Five additional surface water samples were collected as part of the ecological sampling described below.

In addition to the samples obtained for chemical analysis to define the extent and concentration of contamination, an ecological assessment was performed to better define the impact of the Site contaminants on the environment. This assessment included the following activities:

- Sediments were obtained from 3 locations in Goose Cove, 9 locations in Goose Pond, and 3 locations in Horseshoe Cove. These sediments were sent to a laboratory where tests were performed to evaluate whether the sediment is toxic to aquatic organisms.
- A survey of the benthic community (bottom dwelling organisms) was performed at 3 locations in Goose Cove, 16 locations in Goose Pond, and 3 locations in Horseshoe Cove by collecting sediment samples and sending the samples to a laboratory that identified the type, abundance and diversity of organisms present in the samples.

- Six areas of vegetation in Goose Pond and 3 in Horseshoe Cove were evaluated to assess the health of the vegetation and determine whether contamination is present in the plant tissue.
- Fish tissues samples were obtained at 3 locations in Goose Cove, 8 in Goose Pond, and 3 in Horseshoe Cove. Laboratory chemical evaluations were performed on these samples.
- Crab tissue samples were obtained at 3 locations in Goose Cove, 4 locations in Goose Pond, and 3 locations in Horseshoe Cove. Laboratory chemical evaluations were performed on these samples.
- Soft-shell clam tissue samples were collected at 6 locations in Good Pond and 1 in Horseshoe Cove. Laboratory chemical evaluations were performed on these samples.
- One sample of marine worms was collected from the former mine pit within Goose Pond. Laboratory chemical evaluations were performed on these samples.
- Ten samples of terrestrial invertebrates (earthworms, ants, spiders, etc.) were collected at soil sampling locations across the Site. Laboratory chemical evaluations were performed on these samples.

Figure 4 shows the locations where surface soil samples were obtained. Figure 5 shows the locations where sediment samples were obtained. The preliminary conclusions from the Report are presented below:

- Consistent with prior studies, the mining operations and other areas of the Site, contain levels of metals that may pose a threat to human health and the environment. The inorganic constituents detected most often above the background levels are arsenic; cadmium, chromium, copper, lead and zinc.
- One organic constituent, PCBs, has been detected in the soil of former mine operations area.
- Inorganic constituents have been detected above background levels in the sediments of Goose Pond, Goose Cove, and Marsh Creek.

- Elevated levels of metals, particularly lead, were found in the soft-shell clam samples obtained in Goose Pond.

## Schedule

The information from the "Phase 1A Remedial Investigation Report", along with the data collected in 2006, will be evaluated to determine what additional studies may be necessary in 2007 to complete the RI/FS. Depending upon whether additional studies are necessary, the Remedial Investigation Report will be finalized during 2007 or 2008. After completion of the Remedial Investigation Report, a Feasibility Study will be prepared to evaluate cleanup options for the Site. The Feasibility Study will likely be completed in late 2007 or in 2008.

## Information and Contacts:

Internet users may access current site information at:

<http://www.epa.gov/superfund/sites/npl/me.htm#statelist>

Site information can also be found at:

**Brooksville Free Public Library**  
1 Town House Road  
Brooksville, Maine 04617

### For More Information Please Contact:

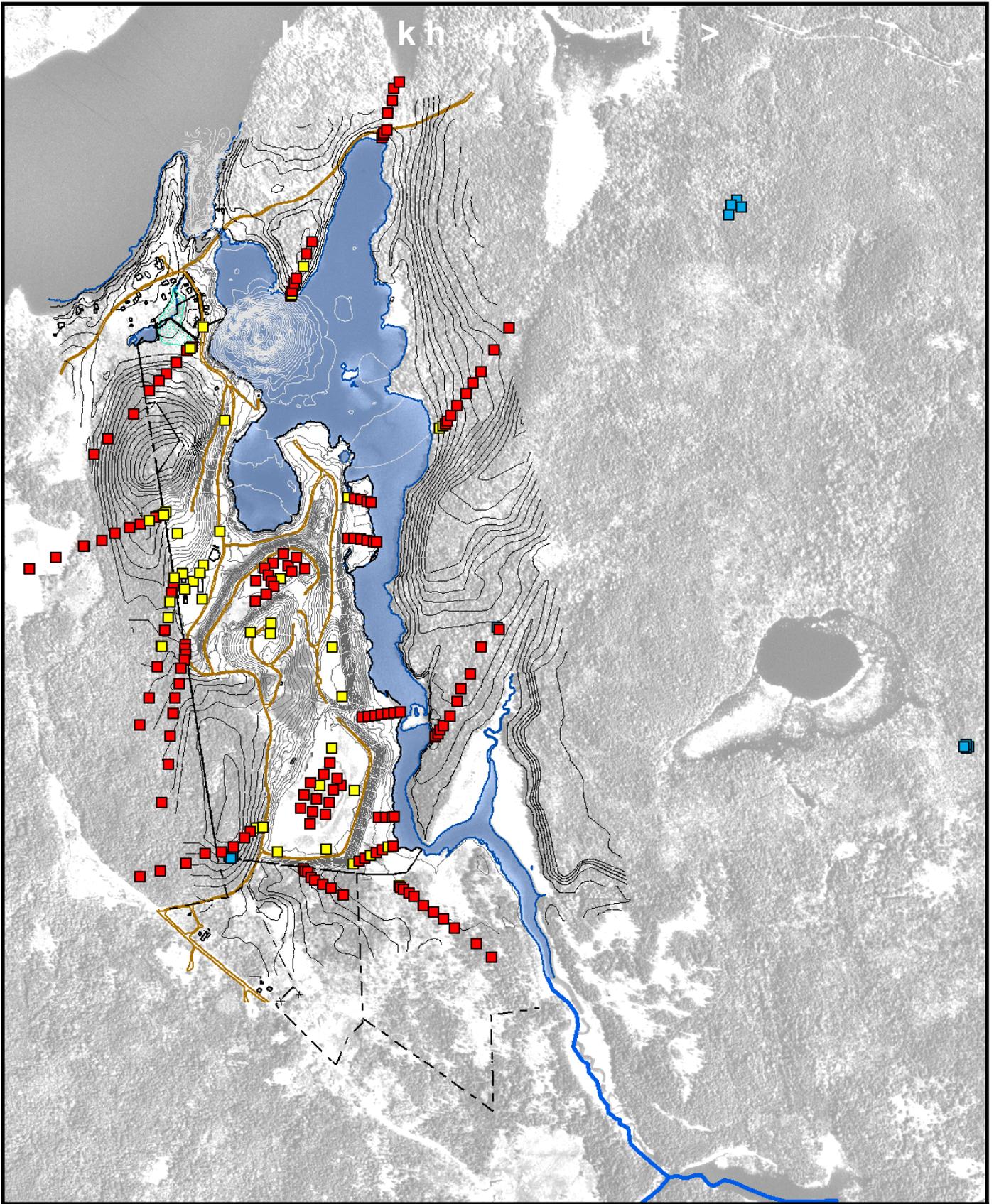
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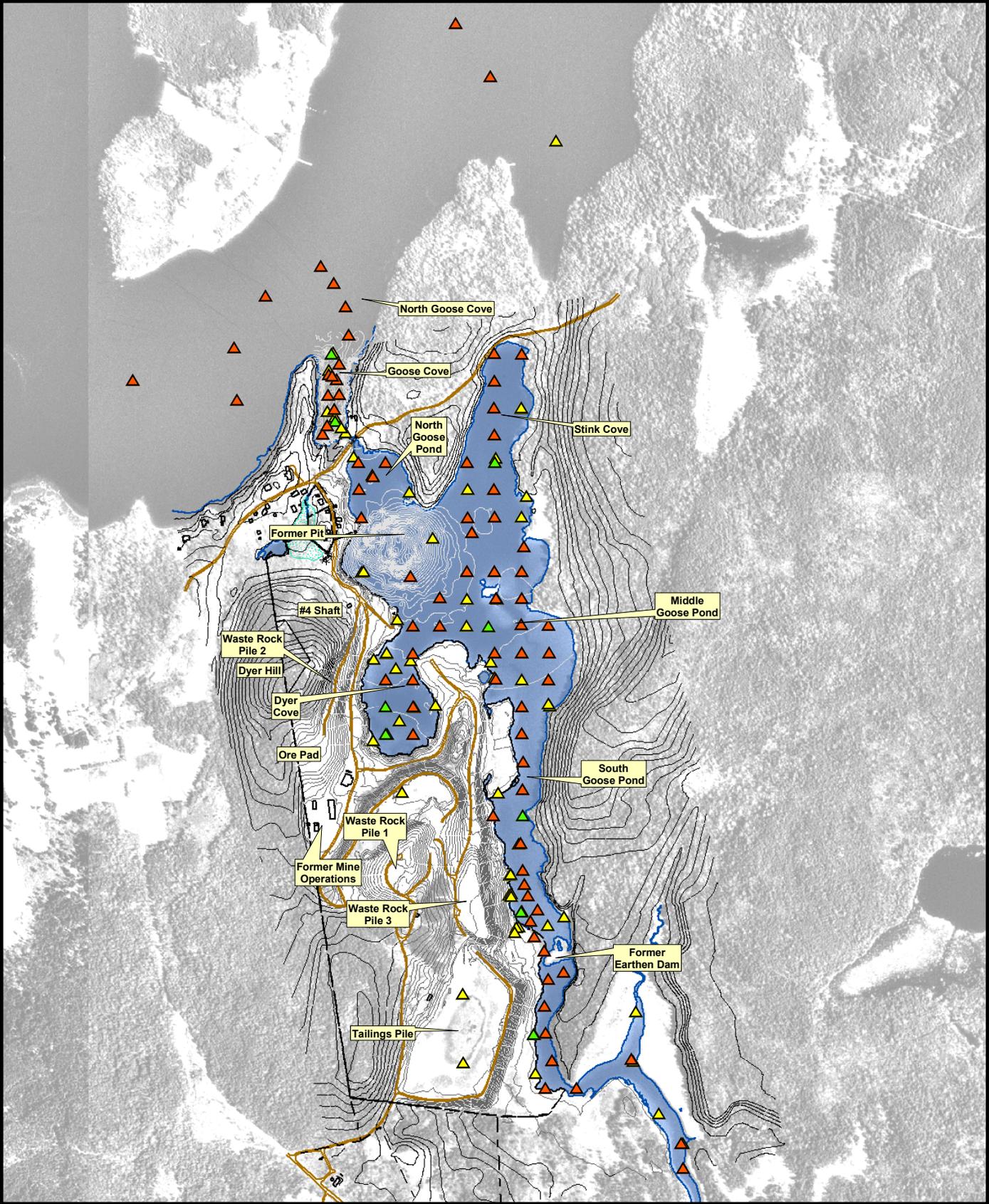
- Background Surface Soil
- Surface Soil XRF Field Analysis
- Surface Soil Off-site Analysis

Prepared by BRP | Checked by PSB

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**Figure 4**  
**Location of Soil Samples**  
**Callahan Mine Superfund Site**  
**Brooksville, Maine**  
**MACTEC, Inc.**

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**Legend**

- ▲ Background Sediment
- ▲ Sediment XRF Field Analysis
- ▲ Sediment Full Suite Off-site Analysis
- ▲ Sediment Off-site Analysis

0 500 1,000  
Feet

Prepared by BRP Checked by PSB

**Figure 5**  
**Location of Sediment Samples**  
**North Area**  
**Callahan Mine Superfund Site**  
**Brooksville, Maine**  
**MACTEC, Inc.**