

## Field Monitoring Report -- Pebble Copper/Gold Exploration Project --

Personnel: Bill Cole (DNR/MLW)	Inspection Date: 7/12/11
Michele Sherwood DEC/SPAR)	Site Contact: Jeff Norberg
Gay Harpole DEC/SPAR)	APMA #: A116118
<b>■ Inspection Type:</b> <input type="radio"/> Complete: X <input type="radio"/> Partial: <input type="radio"/> Follow-up: <input type="radio"/> Response to Public Complaint:	<b>■ Wildlife Observed:</b> <input type="radio"/> Bear: <input type="radio"/> Caribou: <input type="radio"/> Moose: <input type="radio"/> Waterfowl: <input type="radio"/> Fish: <input type="radio"/> Other:
<b>■ Weather Conditions:</b> <input type="radio"/> Temperature: 45-50° F <input type="radio"/> Wind: 15-20 mph <input type="radio"/> Precipitation: None <input type="radio"/> Visibility: Variable <input type="radio"/> Sky Conditions: Low overcast, fog at higher elevations <input type="radio"/> Ground Conditions: Damp to dry	
<b>■ Comments:</b> Inspected DDH 10514, where petroleum staining and odor were noted on 6/22/11 (See 6/22/11 Pebble Field Monitoring Report). Spill has been remediated. There was a release of hydraulic fluid at drill #2, on hole #11533 on June 26. Release was contained within the drill and mud system. No signs of staining or petroleum products were observed during this inspection. See pages 2-4, this report. A filled sump at DDH 10523 has collapsed, and needs more fill. The fuel site at Big Wiggly Lake was also visited. Everything appeared in good order; no spills or other violations were noted. See Photos #26 & 27.	
<b>■ Recommendations:</b> Add fill to sump at DDH 10523.	
<b>■ Actions Needed:</b> Re-inspect DDH 10523 to ensure sump has been filled.	

Drill Hole/Site No.: 11533	Date: 7/12/11
Rig No.: 2	Time: 12:25 PM
Activity: Shut down at 1758'. New crew to resume drilling tonight	
<b>■ Condition of Drilling Site:</b> <ul style="list-style-type: none"> <li>○ Distance from waterbody: 200'</li> <li>○ Location of fuel storage: next to drill</li> <li>○ Sorbent pads present: Yes</li> <li>○ Tundra mat: Yes</li> <li>○ Pipe off tundra: Yes</li> <li>○ Litter: None</li> <li>○ Trash containment: Yes</li> <li>○ Sanitary facilities: Yes</li> <li>○ Any spills or staining: No</li> <li>○ General impression: Clean and in good order</li> </ul>	<b>■ Sump Pit (continued):</b> <ul style="list-style-type: none"> <li>○ Location and extent of discharged material: None at time of inspection</li> <li>○ Topsoil, muck, tundra stockpiled: Yes</li> <li>○ Hose color: White</li> </ul>
	<b>■ Drill Water Supply: Well,</b> <ul style="list-style-type: none"> <li>○ Stream, lake/pond: NA</li> <li>○ Location: 1,000' NW of drill</li> <li>○ Adequate water flow and depth for fish passage in streams: NA</li> <li>○ Evidence of significant impacts to riparian vegetation or stream banks: NA</li> </ul>
	<ul style="list-style-type: none"> <li>○ General impression of water body (i.e. clear, turbid, tannic): NA</li> <li>○ Intake description: NA</li> </ul>
<b>■ Drilling Activity:</b> <ul style="list-style-type: none"> <li>○ Drill additives in use: Extreme #1 and Quik Trol Gold on site</li> <li>○ Recirculation tank: Yes</li> <li>○ Water discharged: No</li> <li>○ Artesian zone encountered: No</li> </ul>	<ul style="list-style-type: none"> <li>○ Structure clear of debris: NA</li> <li>○ Mesh size: NA</li> <li>○ Submerged: NA</li> <li>○ Fuel/generator location to source: Adjacent</li> <li>○ Catch basin for fuel supply: Yes</li> <li>○ Sorbent pads: Yes</li> </ul>
<b>■ Sump Pit: 4 pits in use</b> <ul style="list-style-type: none"> <li>○ Location: Adjacent to drill</li> <li>○ Discharge trench: Yes</li> <li>○ Dimensions of pit: 4 - 8'X15', additional pits being dug up on hilltop</li> </ul>	<ul style="list-style-type: none"> <li>○ Hose color: Yellow</li> </ul>
	<b>■ Other Comments: See page 3</b>

o In use: Yes

Comments: On June 26 this drill experienced a spill of approximately 40 gallons of hydraulic fluid, as was reported to DEC within 24 hours of the incident. The fluid was released from a broken hose fitting connecting the mud mixing motor to the hydraulic hose. The fitting was positioned within the mud tank on the drill platform. The hydraulic fluid was injected down the drill hole, so the leak was not noticed until drill circulation brought it back to the surface, when it was noted in the mud tank. At that time drilling was stopped, and clean up began immediately. The release was confined to the trench and three sump pits. Absorbent materials were used to recover hydraulic fluid floating on top of the drill water. Hydraulic fluid was also skimmed from the water surface and flushed through Absorbent W water scrubber. Water/drill mud/hydraulic fluid emulsion remaining in the mud tank (and therefore not part of the released volume) was transferred into four 55 gallon drums. The hydraulic oil reserve tank on the drill rig holds a total of 80 gallons. After the release, 40 gallons of hydraulic fluid remained either in the reserve tank or in the mud tank.

ADEC directed PLP to collect soil samples from the connecting trench and three drill sumps to assess potential impact to soil. Seven soil samples were collected. Based on the analytical results, Residual Range Organics (RRO) concentrations did not exceed the most stringent ADEC Method 2 cleanup level for RRO. For details see the Oil & Hazardous Materials Incident Final Report submitted to DEC.

At the time of the July 12 inspection no petroleum product staining was visible in the area of the trench or pits.



Photo #1. Mud pits at drill rig #2.



Photo #2. Trench from drill #2 to mud pit. No hydraulic fluid staining was visible.



Photo #3. Stockpiled tundra from mud pits.

Drill Hole/Site No.: 11534	Date: 7/12/11
Rig No.: 3	Time: 12:55 PM
Activity: Drilling at 1,596'	
<ul style="list-style-type: none"> <li>■ Condition of Drilling Site:</li> </ul>	<ul style="list-style-type: none"> <li>■ Sump Pit (continued):</li> </ul>
<ul style="list-style-type: none"> <li>○ Distance from waterbody: 1,500'</li> </ul>	<ul style="list-style-type: none"> <li>○ Location and extent of discharged material: uphill 400'</li> </ul>
<ul style="list-style-type: none"> <li>○ Location of fuel storage: Adjacent to drill</li> </ul>	<ul style="list-style-type: none"> <li>○ Topsoil, muck, tundra stockpiled: Yes</li> </ul>
<ul style="list-style-type: none"> <li>○ Sorbent pads present: Yes</li> </ul>	<ul style="list-style-type: none"> <li>○ Hose color: Black</li> </ul>
<ul style="list-style-type: none"> <li>○ Tundra mat: Yes</li> </ul>	
<ul style="list-style-type: none"> <li>○ Pipe off tundra: Yes</li> </ul>	<ul style="list-style-type: none"> <li>■ Drill Water Supply:</li> </ul>
<ul style="list-style-type: none"> <li>○ Litter: No</li> </ul>	<ul style="list-style-type: none"> <li>○ Stream, lake/pond: Beaver pond</li> </ul>
<ul style="list-style-type: none"> <li>○ Trash containment: Yes</li> </ul>	<ul style="list-style-type: none"> <li>○ Location: 6.000' ESE</li> </ul>
<ul style="list-style-type: none"> <li>○ Sanitary facilities: Yes</li> </ul>	<ul style="list-style-type: none"> <li>○ Adequate water flow and depth for fish passage in streams: NA</li> </ul>
<ul style="list-style-type: none"> <li>○ Any spills or staining: No</li> </ul>	<ul style="list-style-type: none"> <li>○ Evidence of significant impacts to riparian vegetation or stream banks: No</li> </ul>
<ul style="list-style-type: none"> <li>○ General impression: Clean and in good order</li> </ul>	<ul style="list-style-type: none"> <li>○ General impression of water body (i.e. clear, turbid, tannic): Clear</li> </ul>
	<ul style="list-style-type: none"> <li>○ Intake description: Screened cylinder</li> </ul>
<ul style="list-style-type: none"> <li>■ Drilling Activity:</li> </ul>	<ul style="list-style-type: none"> <li>○ Structure clear of debris: Yes</li> </ul>
<ul style="list-style-type: none"> <li>○ Drill additives in use: Bentonite, Penetrol</li> </ul>	<ul style="list-style-type: none"> <li>○ Mesh size: Unknown</li> </ul>
<ul style="list-style-type: none"> <li>○ Recirculation tank: Yes</li> </ul>	<ul style="list-style-type: none"> <li>○ Submerged: Yes</li> </ul>
<ul style="list-style-type: none"> <li>○ Water discharged: Only while running pipe</li> </ul>	<ul style="list-style-type: none"> <li>○ Fuel/generator location to source: 150'</li> </ul>
<ul style="list-style-type: none"> <li>○ Artesian zone encountered: No</li> </ul>	<ul style="list-style-type: none"> <li>○ Catch basin for fuel supply: Yes</li> </ul>
	<ul style="list-style-type: none"> <li>○ Sorbent pads: Yes</li> </ul>
<ul style="list-style-type: none"> <li>■ Sump Pit:</li> </ul>	<ul style="list-style-type: none"> <li>○ Hose color: Yellow</li> </ul>
<ul style="list-style-type: none"> <li>○ Location:</li> </ul>	
<ul style="list-style-type: none"> <li>○ Discharge trench: Yes</li> </ul>	<ul style="list-style-type: none"> <li>■ Other Comments: Observed drilling mud from uphill discharge area flowing downhill</li> </ul>
<ul style="list-style-type: none"> <li>○ Dimensions of pit: 3 – 6'X18'. 2 additional pits being dug</li> </ul>	<ul style="list-style-type: none"> <li>Toward the drill location.</li> </ul>
<ul style="list-style-type: none"> <li>○ In use: Yes</li> </ul>	



Photo #4. Drill Rig #3 on DDH 11534.



Photo #5. Fuel containment at drill #3.



Photo #6. Mud pits at drill #3.



Photo #7. Submerged pump and water intake for drill #3.



Photo #8. New mud pit for drill #3.

Drill Hole/Site No.: GH11-240 Geo tech hole	Date: 7/12/11
Rig No.: 4	Time: 1:55 PM
Activity: Drilling	
<ul style="list-style-type: none"> <li>■ Condition of Drilling Site:</li> </ul>	<ul style="list-style-type: none"> <li>■ Sump Pit (continued):</li> </ul>
<ul style="list-style-type: none"> <li>○ Distance from waterbody: 200'</li> </ul>	<ul style="list-style-type: none"> <li>○ Location and extent of discharged material: Not observed</li> </ul>
<ul style="list-style-type: none"> <li>○ Location of fuel storage: Adjacent to drill</li> </ul>	<ul style="list-style-type: none"> <li>○ Topsoil, muck, tundra stockpiled: Yes</li> </ul>
<ul style="list-style-type: none"> <li>○ Sorbent pads present: Yes</li> </ul>	<ul style="list-style-type: none"> <li>○ Hose color: White</li> </ul>
<ul style="list-style-type: none"> <li>○ Tundra mat: Yes</li> </ul>	
<ul style="list-style-type: none"> <li>○ Pipe off tundra: Yes</li> </ul>	<ul style="list-style-type: none"> <li>■ Drill Water Supply:</li> </ul>
<ul style="list-style-type: none"> <li>○ Litter: No</li> </ul>	<ul style="list-style-type: none"> <li>○ Stream, lake/pond: Frying Pan Lake</li> </ul>
<ul style="list-style-type: none"> <li>○ Trash containment: Yes</li> </ul>	<ul style="list-style-type: none"> <li>○ Location: 200' W</li> </ul>
<ul style="list-style-type: none"> <li>○ Sanitary facilities: Yes</li> </ul>	<ul style="list-style-type: none"> <li>○ Adequate water flow and depth for fish passage in streams: Yes</li> </ul>
<ul style="list-style-type: none"> <li>○ Any spills or staining: None observable from air</li> </ul>	<ul style="list-style-type: none"> <li>○ Evidence of significant impacts to riparian vegetation or stream banks: No</li> </ul>
<ul style="list-style-type: none"> <li>○ General impression: Good, but a few items were on tundra</li> </ul>	<ul style="list-style-type: none"> <li>○ General impression of water body (i.e. clear, turbid, tannic): Clear</li> </ul>
	<ul style="list-style-type: none"> <li>○ Intake description: Screened cylinder</li> </ul>
<ul style="list-style-type: none"> <li>■ Drilling Activity:</li> </ul>	<ul style="list-style-type: none"> <li>○ Structure clear of debris: Yes</li> </ul>
<ul style="list-style-type: none"> <li>○ Drill additives in use: Unknown</li> </ul>	<ul style="list-style-type: none"> <li>○ Mesh size: Unknown</li> </ul>
<ul style="list-style-type: none"> <li>○ Recirculation tank: Yes</li> </ul>	<ul style="list-style-type: none"> <li>○ Submerged: Yes</li> </ul>
<ul style="list-style-type: none"> <li>○ Water discharged: Not observed</li> </ul>	<ul style="list-style-type: none"> <li>○ Fuel/generator location to source: 100' E</li> </ul>
<ul style="list-style-type: none"> <li>○ Artesian zone encountered: Unknown</li> </ul>	<ul style="list-style-type: none"> <li>○ Catch basin for fuel supply: Yes</li> </ul>
	<ul style="list-style-type: none"> <li>○ Sorbent pads: Yes</li> </ul>
<ul style="list-style-type: none"> <li>■ Sump Pit:</li> </ul>	<ul style="list-style-type: none"> <li>○ Hose color: Yellow</li> </ul>
<ul style="list-style-type: none"> <li>○ Location: 30' N of drill</li> </ul>	
<ul style="list-style-type: none"> <li>○ Discharge trench: Yes</li> </ul>	<ul style="list-style-type: none"> <li>■ Other Comments: Did not land at this site,</li> </ul>
<ul style="list-style-type: none"> <li>○ Dimensions of pit: Approx 3'X6'</li> </ul>	<ul style="list-style-type: none"> <li>so this inspection is from the air only.</li> </ul>
<ul style="list-style-type: none"> <li>○ In use: Yes</li> </ul>	<ul style="list-style-type: none"> <li>This is a Geotech hole</li> </ul>



Photo #9. Drill #4 at hole GH11-240. Note several items are on the tundra.



Photo #10. Fuel containment and mud tank at drill #4.



Photo #11. Submerged electric pump and water intake in Frying Pan Lake.



Photo #12. Fuel and generator for drill #4 water source.

Abandoned Drill Hole/Site No.: 10514	Date: 7/12/11
	Time: 1:40 PM
■ Plugged: Yes	
■ Cemented: Grouted	
■ Standing pipe: No	
■ Sump pit filled in: Yes	
■ Water discharge trench filled in: Yes	
■ Site revegetated: Yes, tundra replaced	
■ Date revegetated/reclaimed: Fall, 2010	
■ Artesian water present: No	
■ Any spills or staining: No	
<p>■ Comments/General impression: Replaced tundra is surviving in the trench and mud pits, but the ground is still settling. Vegetation around drill site is generally somewhat sparse. A 4' wide spill was noted adjacent to this drill hole on 6/22/11. The spill has been remediated. The contaminated soil was dug up and removed. See Photo #13.</p>	



Photo #13. Remediated area of spill at DDH 10514.



Photo #14. Tundra replaced in trench.



Photo #15. Tundra replaced over mud pit. Note that site is still settling.

Abandoned Drill Hole/Site No.: 10523	Date: 7/12/11
	Time:2:05 PM
■ Plugged: Yes	
■ Cemented: Grouted	
■ Standing pipe: No	
■ Sump pit filled in: Yes, but there has been some settling, and there is a need to refill one pit.	
■ Water discharge trench filled in: Yes	
■ Site revegetated: Yes. Replaced tundra looks good.	
■ Date revegetated/reclaimed:10/2010	
■ Artesian water present: No	
■ Any spills or staining: No	
■ Comments/General impression: Parts of area have sparse vegetation, and there was little tundra to stockpile where the sump pits were dug. Therefore, they are largely bare, and have not settled yet (See Photo #16.) The fill in one pit has collapsed, however, and needs refilling. Where there was tundra to replace, it looks good (See Photos #18 and 19).	

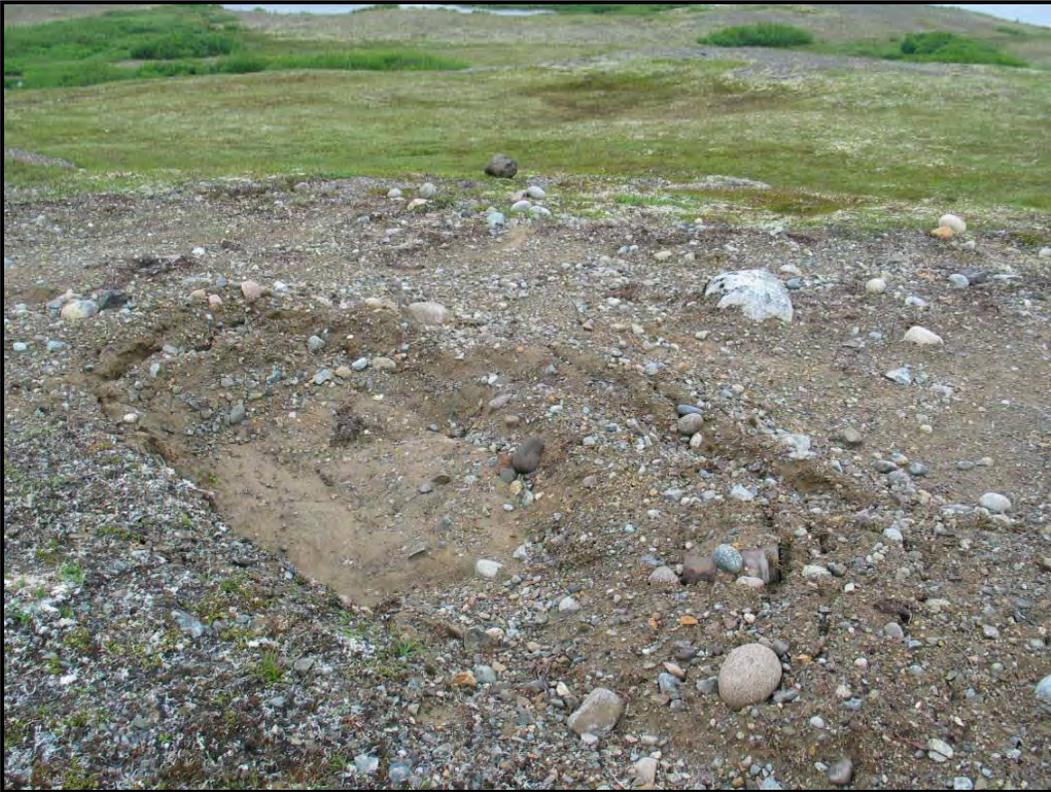


Photo #16. Depression where sump pit at DDH 10523 has subsided.



Photo #17. Filled sump pits at DDH 10523.



Photo #18. Replaced tundra in trench.



Photo #19. Replaced tundra at DDH 10523.

Abandoned Drill Hole/Site No.: 10479	Date: 7/12/11
	Time: 2:15 PM
■ Plugged: Yes	
■ Cemented: Grouted	
■ Standing pipe: No	
■ Sump pit filled in: Yes	
■ Water discharge trench filled in: Yes	
■ Site revegetated: Yes, but there was very little vegetation on site before drilling	
■ Date revegetated/reclaimed:6/2010	
■ Artesian water present: No	
■ Any spills or staining: No	
■ Comments/General impression: Drill site was on a knoll, and this area and similar high ground in the area has little natural vegetation (See Photos #20 & 21). Replaced tundra is alive, but not doing very well (See Photo #22).	



Photo #20. Reclaimed site of DDH 10479. Note sparse vegetation in the area.



Photo #21. Knoll adjacent to DDH 10479. Note lack of vegetation on high ground.



Photo #22. Replaced tundra at DDH 10479.

Abandoned Drill Hole/Site No.: 10490	Date: 7/12/11
	Time: 2:25 PM
■ Plugged: Yes	
■ Cemented: Grouted	
■ Standing pipe: No	
■ Sump pit filled in: Yes	
■ Water discharge trench filled in: Yes	
■ Site revegetated: Yes	
■ Date revegetated/reclaimed:8/2010	
■ Artesian water present: No	
■ Any spills or staining: No	
■ Comments/General impression: Good. Although vegetation is somewhat sparse in the area, the replaced tundra is doing well. (See photos #24 and 25)	



Photo #23. Reclaimed site of DDH 10490.



Photo #24. Replaced tundra on mud pit at DDH 10490.



Photo #25. Replaced tundra on trench, DDH 10490.



Photo #26. Walkway and dock at Big Wiggly Lake.



Photo #27. Fuel storage at Big Wiggly Lake.