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## Memorandum

**To:** Will Groves, Senior Planner, Deschutes County

**From:** David Farrer, Ph.D., Public Health Toxicologist

**Date:** February 7, 2013

**Subject:** Lower Bridge Mine Scope of Work for Public Health Assessment Relative to Future Residents of Proposed Developments on the Property

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In early 2009, the Deschutes County Board of Commissioners (DCBC) rezoned the eastern 160 acres of the Lower Bridge Mine (LBM) property for rural residential development with a condition on final plat approval that states, “Prior to final plat approval for any residential subdivision, the applicant shall obtain from the Department of Human Services (DHS) a determination of ‘no apparent public health hazard’ for a residential use designation for the 160 acres.”<sup>1</sup>

Also in early 2009, the DCBC passed a resolution of intent to rezone the western 410 acres of the LBM property to rural residential if certain conditions are met. One of the conditions of the resolution states, “Within (5) five years of the date the decision in Exhibit C is final or prior to final plat approval for any residential subdivision on the 410 acre area that is the subject of File No. ZC-08-1/PA-08-1, whichever is earlier, the applicant shall obtain from the Oregon Department of Human Services a determination of ‘no apparent public health hazard’ for a residential use designation for this 410 acre area.”<sup>2</sup> Since respective approval of this decision and passage of this resolution, the Oregon Health Authority (OHA) was established and the Public Health Division was placed in OHA; this document will hereafter refer to the agency as OHA.

These conditions require the applicant to obtain determinations of “no apparent public health hazard” directly from OHA; however, OHA in this instance only has the authority to act in an advisory capacity to DCBC, rather than in a regulatory capacity with the developer. Therefore, OHA offers the guidance below for DCBC to use in establishing a workplan for the developer; OHA has determined that the plan as defined below, if complied with, will avoid potential negative health impacts from the development of the site. This Scope of Work (SOW) document outlines the information needed from the applicant.

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<sup>1</sup> Deschutes County Planning Commission Decision ZC-08-1/PA-08-1 – BOCC Decision; Document No. 2009-168.

<sup>2</sup> Deschutes County Planning Commission Resolution No. 2009-035

## I. Objectives

The SOW's overall objective is to advise the DCBC of the information needed from the applicant, including guidelines for the applicant to follow in formulating a Plan of Work (POW). The POW will ensure that the health of potential future residents of proposed residential developments on the Lower Bridge Mine site will not be harmed by current or historical environmental contaminants associated with any portion of the Lower Bridge Mine site. Work performed shall complement and incorporate existing site information with the following overall objectives:

A. Ensure that air around homes currently surrounding the site and around potential future homes at site of proposed development on the eastern portion of the site is safe to breathe by:

1. Developing and implementing short- and long-term dust suppression plans.
2. Developing and implementing a plan to monitor effectiveness of dust suppression plans.

B. Ensure that groundwater to be used by potential future residents for domestic purposes is free of harmful contaminants associated with hazardous and radiological wastes historically stored on the western portion of the site.

C. Describe response plan should additional hazardous materials be discovered in the course of site development.

## II. Plan of Work for Eastern 160 Acres of LBM Site

The applicant shall develop the POW in accordance with the guidelines outlined in this section. Existing data, reports or information, including data from any investigation activity conducted prior to the initiation of the POW may be used, if such data is consistent with the procedures and quality assurance/quality control criteria approved by DCBC. The submitted POW shall include, but not be limited to the following items:

**A. Project Management Plan-** The Project Management Plan shall indicate the following:

1. A proposed schedule for submittals and implementation of all proposed activities and phases pertaining to this SOW. These target dates may be revised by the applicant, in subsequent work plans or amendments, subject to DCBC approval.
2. A description of the personnel (including subcontractors if known) involved in the project and their respective roles in the project.
3. A discussion of how proposed variations from the approved work plan will be managed.

## **B. Dust Suppression Plan**

Objective: The overall objective of this plan is to minimize the aerial migration of nuisance dust containing diatomaceous earth (DE) from the western 410 acres of the site to future residents of the proposed development on the eastern 160 acres of the site in the short- mid- and long-term. To this end, OHA recommends that applicants consult with Oregon State University Extension Services regarding feasible vegetative covers for short and long term dust suppression on the western 410 acres of the site. David Dalton<sup>3</sup>, a botany professor at Reed College, has also offered consultative services free of charge to help with selection of plants that might work to keep dust down in the long term on the western 410 acres of the site. This dust suppression plan should anticipate and mitigate the following:

1. Dust generated by planned work or other activities or events anywhere on the western 410 acres of the site that could reasonably be expected to disturb the soil
2. Dust spontaneously or naturally blown by winds from the western 410 acres of the site onto the eastern 160 acres where future residents of the proposed development would live
3. This portion of the plan must include contingencies for the following phases of work on the western 410 acres of the site:
  - a. Long-term if the applicant pursues further development on the western 410 acres of the site
  - b. Long-term if the applicant decides not to pursue further development the western 410 acres of the site
  - c. Mid-term while applicant is deciding whether or not to do further development on the western portion of the site

## **C. Description of Plan to Verify Implementation/Effectiveness of Dust Suppression Plan**

Objective: The objective of this portion of the POW for the eastern 160 acres of the LBM site is to document how implementation and/or effectiveness of the proposed dust suppression plan will be verified. This verification need not include air monitoring, but rather can focus on verification that the suppression plan has been/is being implemented. Specific verification activities will depend on the dust suppression plan proposed and approved. The following is a list (not exhaustive) of example verification activities that could satisfy this requirement depending on the dust suppression strategies proposed in section III.B above:

1. Independent expert verification that vegetative cover on the western 410 acres of the site is in healthy condition
2. Independent expert verification that vegetative cover on the western 410 acres of the site is self-sustaining without continued irrigation
3. Photographic documentation of extent of vegetative cover on the western 410 acres of the site

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<sup>3</sup> David Dalton can be reached at 503-517-7473 or [david.dalton@reed.edu](mailto:david.dalton@reed.edu).

4. Photographic documentation that approved suppression activities, such as watering during soil-disturbing work on the western 410 acres, are occurring as planned

#### **D. Groundwater Sampling Plan**

Objective: To ensure that groundwater to be used for domestic drinking water in proposed residential development on eastern 160 acres of the site is not impacted by hazardous or radiological wastes formerly stored on site or by any alleged additional hazardous waste buried on any portion of the site.

Scope: The plan shall supplement previous groundwater sampling data collected at the site by Newton Consultants Inc. in March of 2008. Additional sampling shall determine whether groundwater remains clean under different groundwater flow conditions than those tested by Newton Consultants in March of 2008. The groundwater sampling plan shall include the following:

1. Proposed monitoring locations:
  - a. Two new wells to be dug on the eastern 160 acres of the site
  - b. The additional wells on the eastern portion of the site should tap the same aquifer that future residents will be drawing drinking water from and would ideally be the actual planned domestic wells.
  - c. The two wells selected for sampling should be on opposite ends of the development plat for the eastern 160 acres to maximize spatial representativeness
2. Sampling methods – similar to those used by Newton Consultants in March of 2008
3. Number of samples - One sample from each location (total of two samples)
4. Proposed sampling date – Samples should be collected during flow conditions that are different from those that prevailed at the time of Newton Consultants sampling in 2008.
5. Analytical parameters and methods - These should be identical or very similar to those in the Newton Consultants Inc. sampling report from March 2008.
6. Justification for all of the above or deviations from the above
7. Quality assurance/Quality Control (QA/QC) plan for sample collection, handling, storage, and laboratory analysis
8. Response Plan - If contamination is discovered above health-/risk-based screening values in either of these samples, neighbors currently tapping the same aquifer should be notified within 7 days.

## **E. Contingency Plan**

When digging begins on the eastern 160 acres of the site for construction or other purposes, it is possible that additional hazardous substances could be discovered. This contingency plan should detail how such situations will be evaluated and resolved before work resumes at the site.

## **F. Data Reporting Plan**

The POW should include a section outlining how and roughly when data will be summarized and reported to DCBC. The Data Report should include but not be limited to:

1. Maps with sampling locations, matrices, and analytes clearly indicated
2. Date, location, matrix, units, limit of detection, and measured concentrations for all analytes for each sample
3. Meteorological conditions and type/location of onsite work activity taking place during any air sampling or monitoring
4. Any photographs or narrative reports from experts generated or collected pursuant to section II.C

## **III. Plan of Work for Western 410 Acres of LBM Site**

The applicant shall develop this POW in accordance with the guidelines outlined in this section. Existing data, reports or information, including data from any investigation activity conducted prior to the initiation of the POW may be used, if such data is consistent with the procedures and quality assurance/quality control criteria approved by DCBC. The submitted POW shall include, but not be limited to the following items:

### **A. Project Management Plan-** The Project Management Plan shall indicate the following:

1. A proposed schedule for submittals and implementation of all proposed activities and phases pertaining to this SOW. These target dates may be revised by applicant, in subsequent work plans or amendments, subject to DCBC approval.
2. A description of the personnel (including subcontractors if known) involved in the project and their respective roles in the project.
3. A discussion of how proposed variations from the approved work plan will be managed.

### **B. Dust Suppression Plan**

The dust suppression plan described in section II.B of this SOW will also meet the requirement for the POW for the western 410 acres of the site

### **C. Description of Plan to Verify Implementation/Effectiveness of Dust Suppression Plan**

The plan described in section II.C of this SOW will also meet the requirements for the POW for

the western 410 acres of the site.

#### **D. Groundwater Sampling Plan**

Objective: To ensure that groundwater to be used for domestic drinking water in proposed residential development on western 410 acres of the site is not impacted by hazardous or radiological wastes formerly stored on site or by any alleged additional hazardous waste buried on any portion of the site.

Scope: The plan shall supplement previous groundwater sampling data collected at the site by Newton Consultants Inc. in March of 2008. Additional sampling shall determine whether groundwater remains clean under different groundwater flow conditions than those tested by Newton Consultants in March of 2008. The groundwater sampling plan shall include the following:

1. Proposed monitoring locations:
  - a. Irrigation well used as water source for pivot
  - b. Spring in Deep Canyon
2. Sampling methods – similar to those used by Newton Consultants in March of 2008
3. Number of samples - One sample from each location (total of two samples)
4. Proposed sampling date – Samples should be collected during flow conditions that are different from those that prevailed at the time of Newton Consultants sampling in 2008.
5. Analytical parameters and methods - These should be identical or very similar to those in the Newton Consultants Inc. sampling report from March 2008.
6. Justification for all of the above or deviations from the above
7. Quality assurance/Quality Control (QA/QC) plan for sample collection, handling, storage, and laboratory analysis
8. Response Plan - If contamination is discovered above health-/risk-based screening values in either of these samples, neighbors currently tapping the same aquifer should be notified within 7 days.

#### **E. Contingency Plan**

When digging begins on the western 410 acres of the site for construction or other purposes, it is possible that additional hazardous substances could be discovered. This contingency plan should detail how such situations will be evaluated and resolved before work resumes at the site.

## **F. Data Reporting Plan**

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1. Maps with sampling locations, matrices, and analytes clearly indicated
2. Date, location, matrix, units, limit of detection, and measured concentrations for all analytes for each sample
3. Meteorological conditions and type/location of onsite work activity taking place during any air sampling or monitoring
4. Any photographs or narrative reports from experts generated or collected pursuant to section II.C or III.C