Please print a copy of the attached deficiency letter for the above site.

Note to Interested Parties: If you are receiving this email, it is because you signed up to receive all correspondence from the Department to the Operator regarding the above Proposed Opencut Site.

Jana Gruber
DEQ Opencut Section
jgruber@mt.gov
February 9, 2018

Golden West Properties, LLC  
2233 W Kagy #1  
Bozeman, MT  59718

RE:  Deficiency Notice  
Application for Open cut Mining Permit  
Golden West Pit Site, Open cut #2351  
Yellowstone County

Dear Mr. Lohman:

On December 12, 2017, the Department of Environmental Quality (DEQ) received your response to its January 4, 2016 Deficiency Notice on the Open cut Mining Permit application for the Golden West Pit.

On December 22, 2017, DEQ extended its review of the revised application to a total of 60 days, in accordance with § 82-4-439(2)(c), MCA. Further review of the revised application was required to assess substantial issues identified by citizens at the public meeting conducted on April 2, 2013. Specifically, the additional time was required to evaluate concerns that the proposed Plan of Operation did not adequately protect the shallow groundwater resources that local residents use for drinking water and domestic needs.

DEQ performed an acceptability review of the application in accordance with the requirements of §§ 82-4-432 and 434, MCA, of the Open cut Mining Act and its implementing rules (ARM Title 17, chapter 24, subchapter 2). In accordance with § 82-4-432(10), this letter serves as notice to you that the application contains deficiencies which must be corrected before the application can be approved. A detailed identification of all deficiencies is provided below. As a result of these deficiencies, DEQ disapproves the application as submitted.

Pursuant to the provisions of § 82-4-432 of the Open cut Mining Act, you have the following options for addressing the deficiencies identified by DEQ in the application:

1. Submit revised application materials that resolve all deficiencies, and after DEQ’s review confirms the application is acceptable, the permit will be issued;

2. Submit revised application materials that do not resolve all deficiencies, and after DEQ’s review determines the application is not yet acceptable, it will be disapproved and a Deficiency Notice will be issued; or,

3. Do not submit revised application materials, and 1 year after the date of DEQ’s latest Deficiency Notice, DEQ will notify you that the application will be abandoned and void unless you provide the requested information within 30 days of DEQ’s notification.

Sent via email to clint@bridgervc.com
Should you disagree with DEQ’s decision to disapprove your application based on the identified deficiencies, you are entitled pursuant to § 82-4-427(1)(a), MCA, to appeal DEQ’s decision to the Board of Environmental Review by submitting a written request to the board within 30 days of the date of this Deficiency Notice.

Upon receipt of all required materials, DEQ will review your revised application and notify you whether it is acceptable, or deficiencies remain. In accordance with § 82-4-439(2)(b & c), MCA, the Department will notify you of its determination within 30 days from the date all your revised materials are received. DEQ may extend this review period by another 30 days if it notifies you of the extension prior to the end of the original review period. The reason for the extension would be included in the extension notice.

Submit revised application materials that resolve all the deficiencies identified below to the DEQ Opencut Mining Section in Helena as one package. Submit complete versions of any forms you revise, but do not resubmit the whole application package. For example, if you make changes to the Plan of Operation and Application resubmit that entire form, but do not resubmit unchanged documents attached to it. The contents of an application constitute legal documents and become part of the permit; therefore, all required certifications and approvals must be signed and dated.

Please provide revised documents in type-written form. Creating electronic versions now will make it easier for you to update the documents in the future. Electronic versions of Opencut Section forms are available at: http://deq.mt.gov/Land/opencut/opencutpermitforms.

Opencut Mining Plan of Operation and Application

1. **Note on Water Resources Protection** - DEQ observes that: a) the operator’s Plan of Operation must ensure the protection of the shallow groundwater resources used by local residents [§ 82-4-434(3)(i & n), MCA, and ARM 7.24.218(1)(h)]; and b) previous DEQ Deficiency Notices required surface water and groundwater quality and quantity monitoring [ARM 7.24.212(6)]. The following new application materials received December 12, 2017, contain information relevant to these requirements:
   - Hydrogeologic Assessment (October 2017)
   - Monitoring Well Installation Plan (October 2017)
   - Groundwater Monitoring Plan (October 2017)
   - Site Map dated 12/4/17 (i.e. monitoring well locations)

In addition, DEQ notes that the previous Plan of Operation received November 4, 2015, eliminated both asphalt and concrete plants from the proposal, and the new Plan of Operation received December 12, 2017, eliminated the on-site fuel storage tank facility. As a result, there is no longer: a) potential for a spill of petroleum or other hazardous substances from asphalt and concrete plants; b) potential to release a large volume of fuel from the storage tank facility; and c) need for a Spill Prevention, Control, and Countermeasure (SPCC) plan meeting federal regulations [40 CFR Ch. 1, Part 112]. In response to these changes:
   - Section D1-2 of the new Plan of Operation describes measures that would be used to prevent and promptly cleanup any leaks or spills that may occur during operation of
the remaining stationary equipment (crusher; drag line; generators; conveyors) and mobile equipment (fuel truck; haul trucks; wheeled and tracked loading and excavating equipment; etc.).

- The Groundwater Monitoring Plan provides for routine groundwater sampling to monitor for any potential impacts on water quality over time, and for emergency soil and groundwater sampling as part of any spill cleanup to ensure that water resources are protected and preserved.

Specific deficiencies regarding the new application materials referenced above are described below at D1-2, Hydrogeologic Assessment, Monitoring Well Installation Plan, and Groundwater Monitoring Plan.

2. **D1-2:** Regarding the measures that would be used to prevent and promptly clean-up any leaks or spills that may occur during Opencut operations:
   a. These checkboxes were left blank: “☐ Non-Mobile On-Site Tank: ☐ Single Wall* or ☐ Double Wall;” and the underlying text description indicates the maximum quantity of regulated hazardous liquids on-site would be: “Up to 10, 55-gallon drums, stored on spill control pallets inside enclosed container.” As a result, the immediately underlying reference to “*Dual wall tanks” is contradictory and must be deleted.
   b. To ensure clarity as to where the refueling of mobile and stationary equipment would occur, after the existing text at item 6, insert appropriate, site-specific text to the effect of the example *italicized* below:

   “6. A fuel attendant will be at the fuel hose control valve at all times during refueling. All transfers of fuel from a mobile fuel truck or 55-gallon drum to mobile equipment will occur in “Heavy Equipment Parking & Fueling Area” shown on the Site Map. Mobile equipment includes, but is not limited to, haul trucks; wheeled and tracked loading and excavating equipment; and any other vehicles used during Opencut operations. Stationary equipment that may need refueling consists of: crusher; drag line; generators; and conveyors. Transfers of fuel to stationary equipment will occur at the equipment location, in accordance with all the spill prevention and cleanup protocols and procedures described in this section and Opencut permit application.”

3. **Hydrogeologic Assessment, Groundwater Monitoring Plan, and Monitoring Well Installation Plan (October 2017):**
   a. Hydrogeologic Assessment:
      i. In the Table of Contents, provide a list of figures.
      ii. Based on the evaluation provided in section 1.1, and the unconfined state of the shallow groundwater system, DEQ agrees that existing monitoring wells MW-1, 2, 3, & 4 are suitable for measuring water levels, but not for water quality sampling because their screens do not span the entire range of water table fluctuations. To ensure clarity, delete the words “Several of the” from the first sentence of the second paragraph.
      iii. In Table 1-1, the “Comments” for MW-3 indicate the well would be: “Useful for chemistry if re-screened.” However, no proposal to re-screen MNW-3 is included in the application. Therefore, to ensure clarity, either: i) delete that phrase, or ii)
provide a detailed proposal to re-screen MW-3 for DEQ's consideration and approval prior to any re-screening effort.

iv. Section 1.3.2 indicates: “A pump test will be performed on the proposed down gradient well to confirm/validate this value. The pump test will be performed following well development.” DEQ understands this refers to proposed well MW-6 identified in the Monitoring Well Installation Plan and shown on the Site Map. To ensure clarity, revise the first sentence as follows: “A pump test will be performed on the proposed down gradient well MW-6 proposed in the Monitoring Well Installation Plan to confirm/validate this value. The pump test will be performed following well development.”

v. Section 1.4; 4th bullet: Correct the reference from Figure 5 to Figure 2, since the latter is the groundwater contour map and there is no Figure 5.

vi. Provide in a new Appendix the well drilling and construction logs for MW-1, 2, 3 and 4. Note: These can be obtained from Attachment A of the “October 2015 - Monitoring and Quality Assurance Plan” included in the current application which is posted on-line at the DEQ website: https://searchopencutpermits.mt.gov/ (i.e. pages 317-324).

vii. On the revised title page, add below existing “October 2017”: “Revised <<month & year>>.”

4. **Monitoring Well Installation Plan:**

a. To ensure clarity in the first paragraph of section 1.0:

- Delete the words “As mentioned, several of” from the first sentence of section 1.0, and insert the following phrase just before the period to provide specific reference to the four existing wells “(i.e. MW-1, 2, 3, and 4).”

- In the second sentence, change “sample” to “sampled.”

- In the third sentence, change “will be” to “was.”

- Insert the following sentence between the second and third sentences: “The DEQ Opencut Mining Program will be notified as soon as drilling is scheduled (at least 14 days prior to the start date) so DEQ can send an observer if feasible.”

b. Table 1-1 indicates proposed wells MW-5 and MW-6 would be constructed and screened from 2 feet to 30 feet below grade. In contrast, text below the first two square bullets on page 2 indicates the casing would extend 1 foot into the underlying shale bedrock, which the Hydrogeologic Assessment indicates is expected at about 25 feet below grade. As a result, the proposed depth and screened interval of MW-5 and MW-6 is uncertain.

Furthermore, the current proposal would result in 28 feet of screen in each well, which would cause the water samples collected to represent the entire saturated thickness of the aquifer, rather than the upper portion that would be most impacted by any spill of petroleum constituents at the ground surface. The purpose of the proposed wells is to provide water quality data that assesses potential impacts of the Opencut operation, therefore:
- Provide an evaluation of the water level data presented in the Hydrogeologic Assessment for the existing monitoring points nearest the proposed wells (i.e. for MW-5 interpolate among MW-3 and the nearby ditch points; and for MW-6 interpolate between MW-1 and MW-4); and,
- Propose new screened intervals of no more than 15 feet that span the entire range of water table fluctuations anticipated at each proposed well location.

c. To ensure clarity, add a final sentence to the first paragraph of section 1.2, as follows: “For each well, split spoon soil samples will be collected continuously from the ground surface to the total depth drilled.”

d. As discussed above, section 1.3.2 of the Hydrogeologic Assessment indicates well MW-6 would be pump tested after development to confirm/validate the preliminary hydraulic conductivity value of 700 ft./day previously determined by others. However, no proposal for the pump test has been provided. Therefore, provide in the Monitoring Well Installation Plan a detailed proposal on: i) how the MW-6 pump test would be conducted; ii) the observation wells to be used; iii) how the resulting data would be analyzed; and iv) when the field data, analysis, results, and conclusions would be reported to DEQ.

e. Below the final square bullet in section 1.2 (on page 3), at the first open circle bullet, change 60 days to 30 days to be consistent with the commitment at the third open circle bullet to provide all well logs to the DEQ within one month of drilling the wells.

f. The Hydrogeologic Assessment indicates groundwater flow beneath the site varies seasonally from east to southeast. Proposed well MW-6 is located to the downgradient east of the heavy equipment parking and fueling area, but no monitoring well is proposed to its downgradient southeast. The purpose of the proposed wells is to provide water quality data that assesses potential impacts of the Open cut operation, therefore, propose to install additional monitoring well MW-7 at the approximate location shown at the red “X” drawn on the Site Map snippet below (above the words “Materials Stockpile Area”).

If that location is not feasible due to site considerations not currently known to DEQ, provide appropriate reasoning and justification for an alternate location southeast of the parking/fueling area. Also incorporate the following updates: i) ensure the proposed well screen is consistent with the guidance provided in above item b); ii) include MW-7 in the Groundwater Monitoring Plan as an additional water level measurement/sampling location; iii) add MW-7 to the Site Map; iv) add abandonment of MW-7 to the Bond Reclamation Spreadsheet; and v) update other application materials if/as necessary to ensure MW-7 is fully represented.
g. On the revised title page, add below existing “October 2017”: “Revised <<month & year>>.”

5. **Groundwater Monitoring Plan**:
   a. In the Table of Contents, provide a list of figures.
   b. The Groundwater Monitoring Plan contains three references to a type II turbidity curtain (in Table 1-1; section 1.2; and section 1.3.5 under the header “Emergency Site Monitoring” on page 5). The curtain is also depicted on the Site Map. However, information about the curtain and how it would be used in day-to-day operations is not provided in the Plan of Operation. Therefore, in section D4 of the Plan of Operation explain the curtain’s role in day-to-day mining operations, and also describe or attach relevant technical literature, manufacturer specifications, and operating and maintenance information, etc.
   c. In section 1.2, regarding the text at the second bullet:
      - Any and all spills of petroleum or other hazardous material onto soil at the site must be cleaned up promptly. Therefore, delete the phrase “(spill > reporting level).”
      - The remainder of the text is ambiguous and the proposed activities do not comport with current professionally accepted standards and practices. For example, confirmation soil samples may be required from an excavation’s sidewalls, as well as its bottom; and conducting emergency well sampling the “same day as initial remediation efforts” is of unclear meaning and does not appear to allow any time to notify DEQ or make the arrangements needed to collect water samples. In addition, the last phrase (i.e. “Return to routine monitoring”) ends without a punctuation mark and its meaning is unclear.
To remedy the above deficiencies, revise the text at the second bullet of section 1.2, and also the bulleted text on page 5 under the heading "Soil" to provide complete and coherent reference to, and relevant discussion of, the DEQ Enforcement Division guidance documents listed below, and provide the documents in an appendix to the Groundwater Monitoring Plan.

- Spill Management and Reporting Policy:  

- Standardized Cleanup Statement for Non-reportable Spills or Releases that Impact Soil:  

- Standardized Cleanup Report for Spills or Releases that Impact Soil:  

- Soil Sampling Guidance:  

d. In section 1.3.3:

- The first paragraph indicates "all sampling equipment will be decontaminated following procedures outlined in EPA’s Field Equipment Cleaning and Decontamination at the FEC," and the most recent version is provided in Appendix A. Cursory review of this EPA document indicates it provides information for a broad range of equipment and situations, most of which are not relevant to the Golden West site. Field sampling personnel would have to search through the document seeking relevant guidance, and it is likely that over time various sampling personnel would draw different conclusions about which decontamination procedures are be used at the site.

As a result, this approach is not consistent with ensuring the integrity of the data to be collected at the site, and does not comport with current professionally accepted standards and practices. Instead of broadly referencing the EPA document, provide in section 1.3.3 (or an appended Standard Operating Procedure) all the information about decontamination means and methods that field personnel would need to conduct soil and groundwater sampling at the Golden West site.

- The second paragraph indicates that between monitoring points, all equipment would be cleaned with only distilled water, and that during emergency monitoring events, 5% acetone solution would be used in decontamination procedures. These proposals do not comport with current professionally accepted standards and practices. At a minimum, between non-contaminated monitoring points all equipment must be cleaned in the following sequence: a) Alconox or Liquinox solution wash, b) tap water rinse, and c) distilled or deionized water rinse (e.g. see page 11; section 3.1; and page 17; section 7.1 of the EPA document).
The use of acetone solution creates the potential for lab detections of that compound, so between contaminated monitoring points the preferred decontamination sequence is: a) Alconox or Liquinox solution wash, b) tap water rinse, c) 10% methanol solution rinse; and d) distilled or deionized water rinse.

- Add a statement that the data collected in the field during each monitoring event would be recorded on a water sampling log, and refer the reader to a blank log form provided in an appendix. (DEQ notes that a sampling log form for the site was previously provided in Attachment E of the October 2015 “Monitoring and Quality Assurance Plan”, which is available at: https://searchpencutpermits.mt.gov/).

e. Regarding footnotes below Table 1-2:
   i) The first note indicates: “Note: Refer to Figure 2, Monitoring Site Plan for a depiction of the monitoring points.” However, no Figure 2 was provided in the Groundwater Monitoring Plan. Either provide the referenced Monitoring Site Plan, or change the reference to the Site Plan provided in the Plan of Operation.
   ii) The note starting with an asterisk (*) refers to “the four groundwater stages identified in Section 4.3,” but there is no section 4.3 in the Groundwater Monitoring Plan. The intent appears to have been to refer to one of the relevant sections of the Hydrogeologic Assessment (October 2017). Revise appropriately.

f. Water monitoring is required before, during, and after Opencut operations [ARM 17-24-212(6)], until the operator submits a Phase II Release Request for the entire permit area, and DEQ approves the request, thus terminating the permit [ARM 17-24-203(7)]. Therefore, to ensure clarity, at Table 1-2: i) add the superscript “**” after the word “Duration**” in the shaded table heading (fourth column); and ii) add the following footnote below the table: “** Water monitoring is required before, during, and after Opencut operations, until the operator submits a Phase II Release Request for the entire site, and DEQ approves that request.”

g. There is reference to Field Blanks and Sample Duplicates in the middle of page 9, but no information is provided about: i) how and when these quality assurance/quality control samples would be collected, and ii) which laboratory analyses would be performed. Provide relevant text, as well as updates to Tables 1-2 (i.e. frequency) and 1-3.

h. In section 1.3.5, under the header Emergency Site Monitoring (page 10), second square bullet, add MW-7 to the list of wells that would be sampled.

i. In the first column of Tables 1-4 and 1-5, add parentheses after “Diesel (#1 & 2)” so the entry is complete and the petroleum products being referenced are clearly understood.

j. In the first footnote below Table 1-5, ensure clarity by adding the following italicized text: “Note: Surface water samples from the Danford Drain will undergo these parameters and the parameters for routine monitoring shown in Table 1-3.”

k. Revise and expand the text in section 1.3.6 to ensure proper and complete reporting. At a minimum, revise to indicate that: i) Routine monitoring reports will be submitted after each sampling event within 30 days of receiving laboratory analytical reports; and ii) Each report will provide field notes, sampling logs, and laboratory
reports; comprehensive data tables, graphs, and maps; and text interpreting the data and results in a thorough, detailed manner consistent with current professionally accepted standards and practices.

1. On the revised title page, add below existing “October 2017”: “Revised <<month & year>>.”

6. **D-4:** As discussed above at item b) of the Groundwater Monitoring Plan deficiency, insert text explaining the role of the type II turbidity curtain in day-to-day mining operations, and also describe or attach relevant technical literature, manufacturer specifications, and operating and maintenance information, etc.

7. **D10-2:** Identify the minimum height of the soil and overburden stockpiles (i.e. berms) to be placed around the perimeter of the site, as well as the timing of when they would be constructed and seeded [§ 82-4-434(3)(m), MCA & ARM 17.24.218(1)(h)].

8. **E2-1:** In addition to “Year-round Pond” as a postmining land use, check “Rangeland and/or Pasture” as a native grazing/pasture mix is indicated on both the Reclamation Map and in E6-4.

Maps

9. **Site Map:** Add monitoring well MW-7 to the Site Map.

10. **Reclamation Bond Spreadsheet:**
   a. On the line for “abandonment of monitoring wells”, increase the number of wells from “6” to “7” to provide for the eventual abandonment of all seven wells (i.e. MW-1 through MW-7).
   b. The line item “GW Protection & Emergency Action”, indicates a lump sum of $25,000, but no basis for this value is provided. Therefore, provide a supplemental document (i.e. Emergency Action Cost Estimate) for the scenario of cleaning up the spill of a 55-gallon drum of diesel at the heavy equipment parking and fueling area in a manner consistent with the revised Groundwater Monitoring Plan to be provided as part of the next submittal. (Identify the Emergency Action Cost Estimate in the “Comments” field of the Reclamation Bond Spreadsheet, and at check box “gg” on page 2 of the Plan of Operation.)

At a minimum, provide text outlining the above spill scenario and a detailed, itemized cost breakdown (including labor, equipment, materials, soil disposal, lab analysis, etc.) for the following work: i) soil excavation and disposal (assume 15 yards$^3$ of soil); ii) one round of soil sampling and analysis (assume 5 soil samples); iii) two rounds of water sampling and analysis (assume only the emergency monitoring points specified in the revised Groundwater Monitoring Plan); and iv) preparing a report to DEQ describing the spill, cleanup, and results, and providing the laboratory data in tables and on maps in accordance with current professionally accepted standards and practices.
11. Irrevocable Letter of Credit # 2013000600: Submit a revised Irrevocable Letter of Credit addressing the following deficiencies:
   a. The bonded acreage on the Bond does not match the bonded acreage on the Reclamation Bond Spreadsheet.
   b. As stated in #9 on the LOC, “For letters of credit in excess of $100,000.00, we have attached authorization of Bank, under its corporate seal, for the officer signing this letter of credit to issue same.” This has not been received.
   c. The Bank Acknowledgment has an error that was crossed out and initialed. The Bank Acknowledgment needs to be without errors.

12. General Deficiency on extraneous application materials: The current application is posted on the DEQ website at https://searchopencutpermits.mt.gov/ as required by 82-4-432(4)(d), MCA. This application has undergone three complex revisions since DEQ deemed the original application “complete” on February 4, 2013. As a result, the currently posted application contains materials from previous submittals that no longer appear relevant to the revised Plan of Operation on December 12, 2017. For example:
   - Pages 168, and 211-213 are maps that no longer appear relevant.
   - Pages 184-199 and 238-253 contain identical pages that are present within two different Hydrologic Assessments. It is unknown whether the operator wants both hydrologic assessments to be present in the application or only one.
   - A spill plan (pages 355-391) was submitted in 2015. However, section D1-2 of the most recent Plan of Operation indicates that an SPCC plan is not required.
   - In addition, pages 396-398 and 404-405 do not appear relevant to the most recent submittal.

To simplify and resolve this matter going forward, for the next submittal, the operator must resubmit all the materials that constitute its entire and “complete” application. After confirming the application has remained “complete,” DEQ will replace the entire current online application with that submittal.

The DEQ strongly recommends that you use the above-listed deficiencies as a checklist to confirm that your revised application materials are complete and acceptable prior to resubmittal.

If you have any questions contact the Opencut Section at (406) 444-4970.

Sincerely,

Chris Cronin
Opencut Mining Section Supervisor
Department of Environmental Quality
P.O. Box 200901, Helena, MT 59620-0901
Phone: (406) 444-2871; Fax: (406) 444-4988
ccronin@mt.gov

C: Interested Parties List via email