



Reserve Silica Cleanup Agreed Order

by Peter Rimbos, GMVUAC Corresponding Secretary

At a special meeting on Friday, November 16, co-hosted by the WA Department of Ecology (DOE) and the Area Council, the current status of the cleanup at the Reserve Silica site in Ravensdale was presented to members of the Public. Specific focus was on the *Agreed Order* DOE is entering with Potentially Liable Parties (PLPs)—Reserve Silica and Holcim—responsible for cleaning up past practices at the site. Guest speakers were: DOE’s Site Project Manager Madeline Wall and Hydrogeologist Tim O’Connor; Reserve Silica’s General Manager Fred White; and Golder & Associates’ Gary Zimmerman representing Holcim.

Background

Reserve Silica and previous owners and operators used the site (generally located at 28130 Black Diamond–Ravensdale Rd near Ravensdale) for coal through 1956 and sandstone mining until 2007. As part of site reclamation, the mine pits are being backfilled with materials from construction sites. Once the pits were mined out, reclamation was required starting in 1979. Monitoring on site started in 1984.

Through the 1980’s Holcim disposed of a corrosive material called cement kiln dust (CKD)—a fine-grained, solid, highly alkaline waste removed from kiln exhaust gas by air pollution control devices during the production of cement—in two of the open mine pits: Lower Disposal Area – a former open pit sand mine reclaimed between 1979 and 1982 — and Dale Strip Pit – a former open-pit coal mine reclaimed in the 1980s. Both pits were filled and closed under solid waste permits issued by Public Health Seattle King County (Public Health), which also issued a Post-Closure Maintenance Permit. Reserve Silica is now filling the final surface mine area with inert waste, under permits issued by Public Health and DOE.

Groundwater moving through the CKD in the Lower Disposal Area has seeped to the surface. Groundwater and surface water contaminants include high pH (corrosive) water and metals—including arsenic and lead. Contamination from this site has the potential to affect plants, wildlife, surface water, and groundwater on and near the property.

At this time Holcim, one of the potentially liable parties associated with the deposit of CKD on site, has put in place a leachate treatment system, which lowers the pH and attempts to filter out metals. Treated water then is sent to infiltration ponds, which seep down into the ground.

Agreed Order

DOE is working under the state’s Model Toxics Control Act (MTCA). Ms Wall described a draft legal agreement called an *Agreed Order* developed with PLPs, Reserve Silica Corporation and Holcim (US) Inc., to pay for remedial cleanup actions at the site. Burlington Northern Railroad also is a PLP, but has chosen not to participate. The *Agreed Order* requires the PLPs to complete a Remedial Investigation (RI), Feasibility Study (FS), and Cleanup Action Plan (CAP).

Cleanup of the site is a multistep process: 1. Evaluate the site and its history; 2. Identify the sources of any contamination found and if they contaminated the ground or groundwater; 3. Conduct a feasibility study to determine options to clean up the site, if contaminants are found; 4. Establish an action plan; 5. Conduct post-cleanup such as any property covenants needed, pits needing to be filled, etc.; and 6. Complete cleanup, closeout the work, and finally delist the site.

Questions and Answers

Does the Cleanup Action Plan address long-term monitoring? (Yes.)

How long does DOE stay involved (For the duration. The MTCA process requires periodic reviews when hazardous materials are left in place. Every 5 yr we will assess adequacy of remedies.)

Is there experience from similar sites? (Yes, Holcim has worked on several CKD sites.)

Is there anything unique about the geology of this site? (Yes and DOE has a lot of information about the complex geological layers underlying the site including detailed cross-sections.)

Have you modeled the geology and the flow characteristics? (No, but we will.)

What fill is being brought in? (Construction excavation materials—all fill is tested to ensure it meets clean-fill standards.)

What about the proposed zoning change that was requested by Reserve Silica just a couple of years ago to allow residential development once the land is reclaimed? (That is completely off the table.) In a retort, members of the Area Council, which has diligently followed this issue, stated the King County Council simply delayed such a consideration until 2020.

What about sink holes due to the old coal mines? (The mining was really deep.)

What about heavy metals, arsenic, etc.? (Some of the materials backfilled exceeded cleanup levels which is why a cleanup order is necessary.)

How long is the ditch that is collecting water and is it lined? (About a couple hundred feet, captures area where we've seen seeps, can easily find with pH strips, deposits also easy to see, unlike other sites where samples need to be sent to a lab, etc. It is not lined naturally, as precipitates build up, it lines itself as it forms cement from limestone, have to occasionally take it out to a landfill.)

Have seismic studies been done to understand impacts from faults and scarfs? (Yes, but no detailed work—more will be done in the FS.)

Still do not understand what modeling will be done—how can you develop a credible CAP without a validated model that takes into account various events? How can you guarantee it will produce reliable predictions? If monitoring shows something that was not expected, how will it be assessed and addressed? (We will look at groundwater flows, wells, etc. when modeling. We will look for contaminants of concern on site, if additional ones show up, we will address if it is affecting public health or the environment.)

There remain major concerns: There is a fair amount of geology information on the site from past mining, which shows that bedrock groundwater tends to flow north/northwest, major fault along right side, barrier to groundwater in contact with CKD, helps protect Ravensdale Lk, biggest risk is if CKD comes in contact with water, high ph with arsenic, if those migrate to outwash till in north, porous along Ravensdale Cr, Kent Springs 2.5 mi down gradient, if contamination makes it there then could be big problem. Leachate from Lower Disposal Area is piped to infiltration ponds, not treated until this year, monitoring wells show contamination has gone beyond ponds, on adjacent Baja property, don't know how much further it's gone, only one monitoring well in north, only another 600 ft fault barrier sounds good, but Dale Strip Pit was surfaced mined, underneath is underground mine Dale #4, water level mine, build with design that lowest point is portal area, mine tunnel goes past fault line and empties out to the north, testing hasn't shown contamination yet, but in future could get

groundwater seeping into mine, direct pipe to dump into Ravensdale Lk/Cr. All this must be addressed by RI. (It all will be addressed in the work plan.)

The *Agreed Order* focuses on high-pH arsenic and lead, past testing also checked for manganese etc., other studies identified other toxic chemicals associated with CKD, thallium, antimony, etc., from RS study. Others state in certain conditions toxic dioxins can occur. Will the RI test for those bad things? Will there be more in the RI work plan? The community needs to be able to review all this. (We cannot say what the RI will include at this point, please put comments in writing. The *Agreed Order* does not get specific, just says what major tasks will occur. Typically, there is no process for public review of work plan.)

Why is the area of concern defined as it is—there are several potential pollutants that could migrate further that should be considered? (More investigation is needed to see if it has spread, but that's the starting point. RI will define site. If we have concerns about other areas, we will look at them. In your comments please provide DOE such concerns.)

Burlington Northern Railroad is a PLP, but is not participating, what problems can occur from their absence? Will it refuse to participate? (In the MTCA there are mechanisms to provide legal recourse to seek recovery from non-participating PLPs. DOE does not handle that, but Burlington Northern is not off the hook monetarily. It did not protest being named PLP, reason given was that a lot has been done already, felt it would sit it out and deal with it later.)

Do you treat the source of the contaminants? (The RI can look at that.)

What is being done with CKD now? How do you prevent water infiltration? You are treating a byproduct, is there any way to treat the source? Does the treatment plant have limits on how much it can process? How often is CO₂ injected? (Additional uses for CKD have been found, ways to reincorporate. It is still used as fill, but kept away from water sources. A common use is road base, cement base, asphalt separates it, CKD used in King County through early 2000s, e.g., fill used at the Issaquah Highlands. The treatment plant is capable of 500+ gal/min, limiting factor is must bring out more CO₂, still monitoring, telemetry set up. every 5 min or so, already diluted because mixed with already treated water, circulates influent water. We don't know if treating source has been done, the FS will look at range of technologies.)

What responsibilities does DOE have since the PLPs do all the work? (DOE is involved throughout. We review everything and have the prerogative to change direction and require corrections. The work plan will flush out what PLPs will do. DOE has input on additional areas of interest, as does Public Health. A supplemental work plan can be developed if other areas are discovered. We will continue to evaluate and follow the MTCA process to identify extent of contamination and clean up in some fashion.

Who is paying for DOE's time? Major developers threaten to sue all the time, can DOE be sued? Long term we are skeptical that continued treatment or new actions will actually be called for. (From a budget perspective, the PLPs pay for DOE's time. We are working together to move toward a safe end.)

What do you see as major challenges? (Clear communication, keep process moving forward, site geology is complex, Lower Disposal Area Pit is a little more clear, but Dale Strip Pit is more challenging to measure, also circumstantial effects. We will look at all of those things.)

How much more fill can be accepted? Where on site? Does that change where water migrates? (Approximately 400,000 cu yd. Currently focusing on center part. We have been filling for 11 years and haven't seen leachate from that area yet.)

We have been told 2 yrs for a while? (We would include top soil, 1-2 years for replacing fill, then additional 6-12 months. We are currently averaging ~100 trucks/day, but have averaged 250-300 trucks/day.)

Why will no Public Comment be sought on the draft CAP when ready? (That could be considered.)

Public Comment Period

DOE is accepting Public Comment on the draft *Agreed Order* between November 5 – December 7. Comments in several ways. Online at: <http://wt.ecology.commentinput.com/?id=WfVB3>; by mail to: Madeline Wall, Site Manager 3190 160th Ave SE, Bellevue, WA 98008; or by e-mail to: madeline.Wall@ecy.wa.gov.

The draft *Agreed Order* is posted on the Area Council web site at: <http://gmvuac.org/wp/wp-content/uploads/2018/11/WaDOE-Reserve-Silica-Draft-Agreed-Order.pdf>. More information can be found at: <https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=4728>.

Hard copies of documents can be reviewed at: the Maple Valley Library 21844 SE 248th St and DOE's NW Regional Office 3190 160th Ave SE in Bellevue (for latter, DOE requests members of the Public call for an appointment — 425-649-7190).

The Area Council maintains an up-to-date repository of information on cleanup of the Reserve Silica Site on its web site's Reserve Silica page: <http://gmvuac.org/reserve-silica/>.

After the close of the Public Comment period DOE will review and respond to all comments received. DOE may change the *Agreed Order* based on Public input. If DOE does not make significant changes, it will finalize and sign the documents. Then Reserve Silica and Holcim will begin drafting the RI work plan. The Public will have further opportunities to comment when the draft RI, FS, and CAP are complete. The tentative schedule is: Mid 2019--RI Work Plan; Mid 2020--RI Report; Early 2021--FS Report; and Mid 2021--Draft CAP.

Area Council Upcoming Monthly Meetings (All monthly meetings are from 7 - 9:30 PM and held at the Fire Station located at the SE corner of SE 231st St & SR-169 intersection across from the Maple Valley Police Precinct. All members of the Public are welcome. Each meeting begins with an open Public Comment period. Please visit the Area Council's web site: <http://gmvuac.org/>.

Monday, December 3, 2018 — Tahoma School District (TSD) & Fire District (FD) 43 — Tony Giurado (New TSD Superintendent) and Aaron Tyerman (Fire Chief, FD 43).

2019 Meetings — These currently are being planned. If you have a topic you would like to see discussed. Please e-mail your ideas to: info@gmvuac.org.