

Midnite Mine Superfund Site

10090 Percent Design

Appendix R – Staging / Temporary Stockpiling Plan

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LIST OF ACRONYMS

BODR	Basis of Design Report
CSWPPP	Construction Stormwater Pollution Prevention Plan
CSZ	Construction Support Zone
cy	cubic yard
EPA	U.S. Environmental Protection Agency
HSWRP	Hillside Waste Rock Pile
RA	Remedial Action
RD	Remedial Design
Site	Midnite Mine Superfund Site
<u>SDTS</u>	<u>Structure Demolition Temporary Stockpile</u>
STSP	Staging and Temporary Stockpiling Plan
SWMP	Stormwater Management Plan
SWRP	South Waste Rock Pile
TCSS	Temporary Clean Topsoil Stockpile
TISS	Temporary Impacted Soil Stockpile
WTP	Water Treatment Plant

R1.0 INTRODUCTION

This Staging and Temporary Stockpiling Plan (STSP) has been prepared to describe how waste rock and other excavated material will be managed to prevent contamination of previously uncontaminated areas, as well as preventing the release of contaminants to downstream areas during remedial actions (RAs) at the Midnite Mine Superfund Site (Site). This STSP is an appendix to the *Midnite Mine Superfund Site Basis of Design Report* (BODR), which presents the background and supporting information relevant to the Site and the planned RAs. The BODR also contains the engineering drawings, plans, and specifications for the Site remedial designs (RDs) that are necessary to implement the RAs. Specific locations and configurations of proposed temporary stockpiles discussed in this appendix are shown in the appropriate engineering drawings as referenced.

R2.0 MATERIAL HANDLING

This section of the STSP ~~summarizes~~ will summarize the material handling strategy to be used during the RA. This strategy ~~includes~~ will include minimizing the need for stockpiling of excavated material to the maximum extent practical by directly loading excavated materials into haul trucks for transport and placement in the waste containment area. Due to scheduling considerations, direct-hauling may not always be possible. ~~Eight~~ At this point in the design, eight activities have been identified ~~that will require~~ where temporary stockpiling of excavated materials ~~will be necessary~~. These eight activities/areas are:

- 1) Relocation of Existing Topsoil Stockpiles
- 2) Demolition Debris from Structures in the Construction Support Zone (CSZ)
- 3) Phase 1 CSZ Soil Remediation Materials
- 4) CSZ Grading Materials
- 5) Hillside Waste Rock Pile (HSWRP) Process Materials
- 6) Pit 4 – Bottom Cleanup and Grading
- 7) Groundwater Controls Systems Excavation
- 8) Pit 3 – Bottom Cleanup and Grading

The stockpiling activities for materials from these eight ~~activities~~~~areas~~ are primarily associated with early phases of the RA, ~~prior to preparation of~~~~when~~ the waste containment areas ~~for placement of waste~~~~will not yet be available to receive these materials directly without stockpiling (i.e., direct haul and placement)~~. ~~Stockpiling activities are discussed in the following sections~~. If additional ~~materials requiring stockpiling~~~~stockpile areas~~ are identified as the ~~design progresses or during~~ RA construction ~~progresses~~, it may become necessary to amend this STSP to include these materials and ~~any new stockpiles areas required for their temporary storage~~~~stockpile areas~~. Any amendments to this STSP will be subject to EPA review and approval prior to implementation.

R2.1 COMMON ELEMENTS CONSIDERATIONS FOR TEMPORARY STOCKPILES

The following criteria are addressed for each of the eight stockpile areas to the extent they are applicable:

- Staging/Schedule for material stockpiling and final placement.
- ~~Estimate~~~~An estimate~~ of material volume.
- Estimated material properties, moisture conditions, contamination levels.
- Stockpile area location, stockpile space (i.e. surface area) requirements.
- Temporary soil cover requirements, primarily for temporary stockpiles of demolition debris.
- Potential interim revegetation requirements, primarily for uncontaminated material stockpiles that may remain in place for a number of years.

R2.2 EXISTING TOPSOIL STOCKPILES

Existing topsoil stockpiles located in the ~~construction support zone (CSZ)~~, which includes the construction support facilities~~sy~~ and the ~~proposed water treatment plant (WTP)~~ and ponds, are shown on Drawings 2-1, 2-2, and 2-3. Key components of the Existing Topsoil Stockpiles STSP include:

- ~~Grading the~~~~The CSZ will be graded~~ prior to construction of the new ~~construction support facilities needed~~~~buildings that are necessary~~ for the RA. The material in ~~the Existing Topsoil Stockpiles~~~~these existing stockpiles~~ will need to be relocated as part of site

preparation and ~~grading access development~~ work and will be relocated as part of initial site preparation ~~work~~.

- Preliminary testing performed on soils in the south~~western~~ topsoil stockpile (Drawing 2-2-) indicate these materials meet soil cleanup standards and may be used for clean soil cover during RA construction (MWH, 2013). If further testing verifies that these soils, and any soils in the ~~other two smaller~~ stockpiles shown on Drawings 2-1, 2-2, and Drawing 2-3, meet soil cleanup standards, then they will be relocated to a temporary topsoil stockpile. This temporary clean topsoil stockpile (TCSS) will be located at the proposed WTP pond site as indicated on Drawings 2-1 and 4-1.

The WTP equalization ponds are planned for construction at the end of Phase 1 and soils stored in the TCSS will be used in initial phases of cover construction. This material will be used on Pit 4 or other areas where clean cover is required for RA construction (e.g., for areas in the footprint of the Pit 4 Overburden Pile where soil cover is needed after mine waste removal). Prior to stockpiling clean cover soils in the TCSS at the WTP pond site, soil cleanup and verification will be performed as needed so the materials placed in the temporary topsoil stockpile will not become contaminated.

If further testing indicates some of these materials do not meet soil cleanup standards, they will be temporarily stockpiled within the existing mine waste area at the Phase 1 Temporary Impacted Soil Stockpile (TISS) on the north end of the South Waste Rock Pile (SWRP). The TISS material ultimately will be consolidated in the Pit 4 waste containment area. The location of the Phase 1 TISS ~~is also is~~ shown on Drawings 2-1 and Drawing 4-1. Materials placed in the Phase 1 TISS will be placed in Pit 4 during Phase 1 construction.

- Current estimates indicate that approximately 60,000 cubic yards (cy) of material exists in the south~~western~~ topsoil stockpile of the CSZ, ~~and~~ approximately 1320,000 cy of material exists in the southeast topsoil stockpile, and a total of approximately 25,000 cy of material exists in the northwest and northeast~~two northerly~~ stockpiles.
- As discussed above, the locations of temporary stockpiles will be dependent upon whether or not the topsoil material meets soil cleanup standards (so either TCSS or TISS).

- If it is determined that some, or all, of the existing topsoil materials meet soil cleanup standards, then it is likely that the TCSS will be in place for a number of years prior to using this material in RA construction. As a result, these stockpiles of excavated topsoil will receive interim revegetative treatment to reduce the potential for erosion.

R2.3 DEMOLITION DEBRIS FROM STRUCTURES IN CSZ

Existing structures in the CSZ areas shown on Drawing 2-1 will be demolished as described in Appendix H, and the demolition debris relocated to a stockpile area as part of site preparation and access development work. Key components of the CSZ Demolition Debris STSP include:

- Demolition of these structures and relocation of the demolition debris will occur as part of initial site preparation work prior to the development of the Pit 4 waste containment area.
- Demolition debris from CSZ will be stockpiled on the north end of the SWRP in the CSZ Structure Demolition Temporary Stockpile (SDTS). ~~The CSZ SDTS. This temporary stockpile~~ will be located adjacent to the TISS as shown on Drawings 2-1 and Drawing 4-1.
- Those portions of the demolition debris that could be transported by wind or surface water runoff will be protected by placement of a temporary 1.5-foot-thick cover of waste rock.
- Once the Pit 4 waste containment area is sufficiently developed, this demolition debris will be consolidated in an “unclassified waste zone” in the Pit 4 waste containment area (see Drawing 8-5). The volume of this demolition debris is estimated to be approximately 2,000 to 3,000 cy.

R2.4 PHASE 1 SOIL REMEDIATION MATERIALS

The Phase 1 soil cleanup operations that will occur prior to backfilling in Pit 4, and thus require temporary stockpiling, primarily include soil removal activities associated with construction of the ~~Construction Support Zone (CSZ)~~. Specifically, this will include remediation of ~~all~~ soils within the CSZ, Whitetail Creek Drainage cleanup area, and ~~e~~ Existing West Access Road as shown on Drawings 2-1, 2-2, 2-3, and 2-4 that do not meet the soil cleanup standard. The actual extent of the cleanup areas will be determined during the Phase 1 construction. Key components of the Phase 1 Soil Remediation Materials STSP include:

- Any contaminated materials excavated during remediation of the CSZ will be temporarily stockpiled within the Phase 1 TISS ~~within~~ the existing mine waste area.
- Contaminated soils from the Whitetail Creek Drainage and ~~e~~Existing West Access Road (Drawing 2-4) also will be temporarily stockpiled within the Phase 1 TISS and ultimately will be consolidated in the Pit 4 waste containment area.
- Although the volume of material to be excavated during the Phase 1 soil cleanup is not currently known, it is expected to be relatively small (20,000 to 25,000 cy).

R2.5 CSZ GRADING MATERIALS

Preliminary grading designs for the CSZ are shown in Section 9 (Water Treatment Plant ~~WTP~~) and Section 2 (Construction Support Facilities) of the Drawings. Key components of the CSZ Grading Materials STSP include:

- ~~Grading the~~The CSZ ~~will be graded~~ as shown on Drawings 2-~~1413~~ through 2-~~2018~~ during initial site preparation work. It is anticipated that excess cut material will be generated during these site grading operations, and that this material, after verification sampling, likely will be relocated to the TCSS.
- These clean materials in the TCSS will be used as soil cover or in other areas requiring clean fill as part of RA construction.
- If these temporary stockpiles of cut materials remain in place for a number of years prior to using this material in RA construction, they will receive interim revegetative treatment to reduce the potential for erosion.

R2.6 HILLSIDE WASTE ROCK PILE MATERIAL PROCESS MATERIALS

HSWRP materials will be processed by screening and crushing without washing to produce drain rock for the underdrain systems in Pit 3 and Pit 4. Key components of the HWSRP processing STSP include:

- Underdrain Layer. As the underdrain layer is the first backfill layer to be placed in Pit 3 and Pit 4, both the drain rock material, and reject materials from the screening/crushing operation will need to be temporarily stockpiled prior to placement in the pits. HSWRP material processing will occur in two stages; the first stage occurring immediately prior to

Pit 4 backfilling at the start of Phase 1 and the second stage immediately prior to Pit 3 backfilling at the start of Phase 2.

- Volume estimates for processed drain and reject material that will be necessary for Pit 3 and Pit 4 processing are presented in the Material Balance section of Appendix D.
- HSWRP material will be processed without washing. As a result, all processed drain and reject material will be in a relatively dry state at the time of placement in temporary stockpiles.
- The primary stockpiling area for HSWRP material will be in Area 5 of Site. This stockpile area will be expanded by relocating Protore Stockpile 7 material to the top of Protore Stockpile 6 as shown on Drawing 2-~~2220~~. Once Protore Stockpile 7 is removed, the drain material stockpile footprint will be overlain with reject material from the screening operation or other quartz-monzonite-derived (lower reactivity) waste to a depth of 1 foot. This will form a “clean base” for the drain material stockpile should the underlying material be contaminated. Care will be taken during loading of stockpiled drain material for transport and placement in the pits so that processed materials are not mixed with underlying base material or penetrated and mixed with the underlying potential contaminated wastes.
- The existing safety berm along the southerly edge of Area 5 crest (-at the northerly crest of the Pit 3 highwall) will be enhanced and maintained as shown on Drawing 2-~~2324~~ and on Detail ~~199~~ on Drawing 2-~~2923~~. Material will not be stockpiled within ~~15~~fifteen feet of this safety berm.

R2.7 PIT 4 – PIT BOTTOM CLEANUP AND GRADING

Sediments and coarse rock that has accumulated in the bottom of Pit 4 will be removed after completion of dewatering and prior to pit-bottom grading. The volume of pit-bottom sediments is estimated to be approximately 2,400 cy (MGC, 2011). Additional coarse rock material will result from the cleanup of gravel-to-boulder-sized material that currently exists on portions of the pit floor, as well as material that will be produced during pit-wall scaling, pit-bottom grading and underdrain sump excavation. Key components of the Pit 4 Bottom Cleanup and Grading STSP include:

- ~~Pit-Sediment removed during pit~~ bottom ~~sediment~~cleanup will be dried in place, either by natural evaporation or by adding drying agents once the pit has been dewatered. As

a result, the majority of these sediments will be relatively dry and will be removed with common earth-moving equipment and transported to a temporary stockpile area on the relocated Ore Stockpile 7. Measures will be taken to avoid intermingling of this potentially higher-activity waste with the lower-activity mine waste once it is removed from the pit bottom.

~~The As now envisioned, the~~ temporary stockpile area used for storage of these low-moisture sediments from Pit 4 will be located in pits excavated into the upper surface of the relocated Ore Stockpile 7 (see Drawing 2-~~2220~~). These pits will be lined with non-woven geofabric to prevent migration of Pit 4 sediments into the underlying waste rock. These relatively dry sediments will be covered with approximately 1-foot of waste rock to avoid erosion by wind or water.

- Final cleanup of the Pit 4 bottom could require wash down of the remaining fine-grained materials to a low-lying sump area in the pit bottom where, if necessary, they will be pumped into geotubes for dewatering. The geotubes will be placed on a temporary pit-bottom sediment drying pad configured as shown on Detail 7 on Drawing ~~No. 4-8077~~. This temporary pit-bottom drying pad will be located adjacent to the ramp leading into the Pit 4 as shown on Drawing 4-12. This drying pad is located approximately 35-feet above the limits of the southerly end of the drain layer, so that the geotubes can be allowed additional time to dewater during final preparation of the pit bottom, placement of the drainage layer and geomembrane, and initial placement of mine waste backfill layers. With the geotubes placed in this location, any remaining water that drains from these geotubes will flow back into the pit bottom. ~~Impacted This impacted~~ water that passes through the geotube fabric will be relatively free from sediment.

Once mine waste placement reaches the elevation of the temporary drying pad used for pit-bottom sediment, the geotubes and other materials associated with the drying pad will be placed in the central portion of the Pit 4 backfill lift in an area designated for placement of unclassified waste (including high reactivity and/or high activity wastes).

- Coarse rock material removed during pit bottom cleanup, as well as coarse waste rock spoils from pit-bottom sump excavation, will be placed directly on flat areas remaining on Protore Stockpile #6, the top surface of the relocated Ore Stockpile #7, or on top of the waste rock cover placed over dry sediments, as described above, to provide additional erosion protection.

R2.8 GROUNDWATER CONTROL SYSTEMS EXCAVATIONS

The groundwater control systems are discussed in Appendix G. As part of site preparation for construction of the groundwater control systems, level working platforms will be excavated in the three stream channels down gradient of the Mine Area as shown in Section 7 of the Drawings in Volume II. Key components of the Groundwater Control Systems Excavations STSP include:

- Spoils from site preparation excavations meeting the soil cleanup criteria will be stockpiled upgradient from the excavations and used for backfilling and final surface restoration. These spoils will not be stockpiled in or immediately adjacent stream channels or other natural drainage pathways.
- Any site preparation spoils not meeting soil cleanup criteria will be hauled directly to Pit 4 during the Phase 1 backfilling operation and incorporated into the mine waste backfill. If construction of the groundwater control systems occurs before the Pit 4 waste containment area has been adequately prepared for placement of waste, contaminated site preparation spoils will be stockpiled in the Phase 1 TISS.
- Spoils from the extraction trench and barrier wall excavations will be hauled to a stockpile location on the SWRP and incorporated into the Pit 4 mine waste backfill. If any of these excavation spoils are excessively wet, they may be temporarily stockpiled in non-woven geofabric-lined pits at the TISS. The non-woven geofabric will prevent migration of the sediments into the underlying waste rock at the TISS. These spoils will be allowed to dry before placement as backfill in Pit 4. A slag-cement-bentonite method of construction is proposed for barrier walls in the groundwater control systems. The spoils will be self-hardening and will be stockpiled for a few days to weeks prior to backfilling in Pit 4.
- ~~It is anticipated that excavation spoils from groundwater extraction trenches will have high moisture content and will be temporarily placed in geofabric-lined pits to dry by natural evaporation, or be mixed with drying agents prior to placement in the Pit 4 waste containment area.~~

R2.9 PIT 3 – PIT BOTTOM CLEANUP AND GRADING

Sediments and coarse rock that has accumulated in the bottom of Pit 3 will be removed after completion of dewatering and prior to pit-bottom grading. The volume of pit-bottom sediments is

estimated to be approximately 3,300 cy (MGC, 2011). Additional coarse rock material will result from the cleanup of gravel-to-boulder-sized material that currently exists on portions of the pit floor and additional material that will be produced during pit-grading and underdrain sump excavation. Key components of the Pit 3 Pit Bottom Cleanup and Grading STSP include:

- Pit Sediment removed during pit bottom sediments cleanup will be dried in place, either by natural evaporation or by adding drying agents once the pit has been dewatered. As a result, the majority of these sediments will be relatively dry and will be removed and transported to a temporary stockpile area on the East Waste Rock Pile using common earth-moving equipment. Measures will be taken to avoid intermingling of this potentially higher-activity waste with the lower-activity mine waste once it is removed from the pit bottom.

As now envisioned, these low-moisture sediments from Pit 3 temporarily will be placed in pits in the Phase 2 TISS near the existing WTP site, within the footprint of the existing Protore Stockpile No. 1 on the East Waste Rock Pile (see Drawing 4-1). These pits will be lined with non-woven geofabric to prevent migration of pPit sediments into the underlying waste rock. The encapsulated relatively dry sediments will be covered with approximately 1-foot of waste rock to avoid erosion by wind or water.

- Final cleanup of the pit bottom could require wash down of the remaining fine-grained materials to the low-lying sump area in the Pit 3 bottom where, if necessary, they will be pumped into geotubes for dewatering. The geotubes will be on a temporary pit-bottom sediment drying pad configured as shown on Detail 7 on Drawing ~~No. 4-8077~~. This temporary pit-bottom drying pad will be located on a bench above the ramp leading into the Pit 3 as shown on Drawing 4-~~3735~~. This drying pad is located more than 50-feet above the upper limits of the drain layer to allow additional time for the geotubes to dewater during final preparation of the pit bottom, placement of drainage layer and geomembrane, and placement of initial mine waste layers in Pit 3. With the geotubes placed in this location, any remaining water that drains from the geotubes will flow back into the pit bottom. This impacted water that passes through the geotube fabric will be relatively free from sediment.

Once mine waste placement reaches the elevation of the temporary pit-bottom sediment drying pad, the geotubes and other materials associated with the drying pad will be

placed in the central portion of the Pit 3 backfill lift in an area designated for placement of unclassified waste (including high-activity and/or high-reactivity waste).

- Coarse rock material removed during pit bottom cleanup, as well as coarse waste rock spoils from pit-bottom sump excavation, will be placed directly on geofabric placed on flat areas in the TISS, or on top of the waste rock cover placed over dry sediments, as described above, to provide additional erosion protection.

R3.0 CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN

A Construction Stormwater Pollution Prevention Plan (CSWPPP) will be prepared in accordance with the Master Stormwater Management Plan (SWMP) in Appendix O. The CSWPPP will detail specific procedures and physical structures that will be implemented to prevent discharges of turbid water to the surface water at and surrounding the temporary stockpile areas.

R4.0 REFERENCES

Miller Geotechnical Consultants (MGC), 2011. *Geologic Investigations of Pits and Assessment of Pit Sediments - Design Investigation Report, Revision 2*. Prepared on behalf of Newmont USA Limited and Dawn Mining Company for the U.S. EPA Region 10. April 28.

MWH Americas, Inc. (MWH), 2013. *Geotechnical Evaluation Report, IX Treatment Facility, Midnite Mine – Revision 0*. Prepared for Newmont USA Limited and Dawn Mining Company. May.