Geologist’s Review

- Common Corrections

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Industry Training
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Geologist’s Review

Section I
I-1 thru I-13

Section J
J-1 thru J-11
(SWROA J-6)

Section L

Sections O-7 and O-8

Section S
S-1 thru S-6

Section U
U-1, U-2
SECTION I – GEOLOGICAL INFORMATION
### Common Corrections

#### Section 1

<table>
<thead>
<tr>
<th>Coal, Rider Seam(s) And/Or Coal Refuse (USGS Name)</th>
<th>Thickness (Inches)</th>
<th>Organic</th>
<th>Pyritic</th>
<th>Sulfate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-1</td>
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</tbody>
</table>

**Match Legal Ad**
I-2

Is a gravity discharge anticipated?

Up-dip mining = Potential Gravity Discharge
provide attachment
Common Corrections

Section I

I-3 – Coal FlyAsh Usage Information

I-4 – Coal Processing Refuse Disposal Proposed

I-5 – Are Durable Rock Fills Proposed

I-12 – Coal Seam Stratum Clay and Soft Rock Information
Common Corrections
Section I

I-6 Geologic Waivers
Results of test borings as requested in I-11

ABA, Se
Common Corrections
Section I

I-6 Geologic Waivers
Engineering Properties of Soft Rock for Underground Mines as Requested in I-12

Include a discussion of the geology at the mine site. If you are requesting a waiver for engineering properties of soft rock, discuss what type of rock is at the mine site and provide the typical strengths of these rocks.
Common Corrections
Section I

I-7 Geologic Cross Sections
Need multiple coreholes

Coreholes need to be within permit boundary

At least one corehole with ABA/Se analysis and topsoil substitute material
Common Corrections

Section I

I-8 Geologic Map

Surface baseline sites, BWQ sites, GW baseline sites; identify during mining sites

Show all coreholes on cross sections
Common Corrections
Section I

I-9 Detailed Geologic Description
A-H

D – Discuss Selenium

H – discuss potential gravity discharge if I-2 is marked
YES
Common Corrections
Section I

I-10 Geologic Bore Log

Include a log for every corehole shown

I-7
I-8
Common Corrections

Section I

I-11 Statement of Results Information

ABA, Se

Have this information when submitting application
I-13 Topsoil Substitute Information

Topsoil substitute waiver is required unless it can be demonstrated there is sufficient native topsoil material to reclaim the area with 4’ of actual topsoil.

38CSR2 7.6.c.1 Except for valley fills, soil or soil substitutes shall be redistributed in a uniform thickness of at least four feet across the mine area.
Common Corrections
Section I

I-13 Topsoil Substitute Information

Always keep the native topsoil for redistribution

As part of this waiver, volumetric calculations by mine phase need to be provided in the Mine Plan (Section N-1)
SECTION J – HYDROLOGIC INFORMATION
Common Corrections
Section J

J-1 – Proposal Map Surface and Ground Water

J-5 – Seasonal Discharge Rate/Usage and Water Depth Information

J-7 – PHC indications of Contaminated, Diminished, or Interrupted Ground Water

J-8 – PHC indications of Contaminated, Diminished, or Interrupted Surface Water
Common Corrections
Section J

J-2 Groundwater Inventory

½ mile radius from surface and underground area

J-2 List, Inventory sheets

Structures shown on GeoHydro Map
Common Corrections
Section J

J-3 Baseline Surface Water
Not the same parameters as BWQ monitoring

Six (6) consecutive months or eight (8) quarterly samples no more than 2 years old from date submitted

Heavy Metals required

THIS WILL HOLD UP ADVERTISEMENT
Common Corrections
Section J

J-4 Baseline Ground Water
Six (6) consecutive months or eight (8) quarterly samples no more than 2 years old from date submitted

Amendment applications require Ground Water Baseline

THIS WILL HOLD UP ADVERTISEMENT
Common Corrections
Section J

J-6 Probable Hydrologic Consequences

Identifies potential problems

Needs to be specific to type of mining

Include synopsis of the surface and ground water baseline data
Common Corrections
Section J

J-9 During Mining Ground Water Monitoring Waiver

No groundwater users within \( \frac{1}{2} \) mile of underground area
Common Corrections
Section J

J-10 Surface and Ground Water Baseline Monitoring Site Laboratory Data

Copies of original lab sheets for all data provided in J-3 and J-4

Includes the Heavy Metals
Common Corrections
Section J

J-11 Hydrologic Reclamation Plan
Addresses items identified in PHC and provides remedial/preventative measures

Needs to be consistent with J-6
Common Corrections
Section L

Geologic Waivers

I-6 Results of Test Borings     J-9 Groundwater Monitoring During Mining
I-6 Engineering Properties of Soft Rock
I-13 Topsoil Substitutes
S-3 Subsidence Control Plan
S-6 Co-mingling of Waters
Common Corrections
Section O-7
Seal and Management of Mine Openings Information

Include diagrams

Be consistent with Section S-4
Common Corrections
Section O-8

MATERIAL HANDLING PLAN
Information from I-11

Diagram of Encapsulation Cell

Encapsulation Cells will be shown certified by an engineer and shown on progress maps
SECTION S – UNDERGROUND/SUBSIDENCE INFORMATION
Common Corrections

Section S

Section S-1 - Proposed Underground/Augering Operations?

Section S-5 – Acknowledgement of Restoration of Subsidenced Damaged Material
Common Corrections
Section S

Section S-2 - Subsidence Survey Critical Angle Identified Object(s)

Perennial and/or Intermittent streams?

Structures?

PSD or Municipal Water Works?

Renewal Resource Lands

38CSR2 2.105. ...means aquifers and areas for the recharge of aquifers and other underground waters, areas for agricultural or silvicultural production of food and fiber, and grazing lands.
Common Corrections
Section S

Section S-3 Subsidence Control Plan Submittal Requirement Waiver

If “Yes” provide supporting documentation

If “No” provide required information

Marking Sections in S-2 “Yes” requires a SCP be submitted
Common Corrections
Section S

Section S-4 Underground Mine Abandonment Plan
Outcrop barrier widths, including highwall/augering

Discuss maximum potential hydrologic head

Discuss number and type of seals to be installed
(Section O-7)
Common Corrections
Section S

Section S-6 Co-mingle Water from Underground Works Variance Request

Discharge from mine cannot be separated from surface water

If poor water quality is anticipated this waiver cannot be granted
Common Corrections
Section U

U-1

During Mining Surface Water Monitoring
Show on maps
Use Baseline Sites
Consistent Nomenclature

U-2

During Mining Ground Water Monitoring
Show on maps
Use Baseline Sites
Consistent Nomenclature
The End