

1 BEFORE THE LAND USE BOARD OF APPEALS
2 OF THE STATE OF OREGON
3

4 WESTSIDE ROCK – HAYDEN QUARRY, LLC,
5 *Petitioner,*
6

7 vs.
8

9 CLACKAMAS COUNTY,
10 *Respondent,*
11

12 and
13

14 FRIENDS OF THE MOLALLA RIVER and
15 LAURIE FREEMAN SWANSON,
16 *Intervenor-Respondents.*
17

18 LUBA No. 2007-144
19

20 FINAL OPINION
21 AND ORDER
22

23 Appeal from Clackamas County.
24

25 Todd Sadlo, Portland, filed the petition for review and argued on behalf of petitioner.
26

27 No appearance by Clackamas County.
28

29 Megan D. Walseth, Portland, filed a joint response brief and argued on behalf of
30 intervenor-respondent Laurie Freeman Swanson. With her on the brief were Dana L.
31 Krawczuk, Ball Janik LLP, Erin Madden and Cascadia Law P.C.
32

33 Erin Madden, Portland, filed a joint response brief and argued on behalf of
34 intervenor-respondent Friends of Molalla River. With her on the brief were Megan D.
35 Walseth, Dana L. Krawczuk, Ball Janik LLP and Cascadia Law P.C.
36

37 HOLSTUN, Board Member; RYAN, Board Chair; BASSHAM, Board Member,
38 participated in the decision.
39

40 REMANDED

05/22/2008

41
42 You are entitled to judicial review of this Order. Judicial review is governed by the
43 provisions of ORS 197.850.

NATURE OF THE DECISION

Petitioner appeals a county decision that denies its request for a post-acknowledgment comprehensive plan amendment and zoning map amendment to allow an aggregate mining operation on approximately 82 acres of an approximately 117-acre site.

INTRODUCTION

The challenged decision is based on the county’s determination that the applicant (petitioner) failed to carry its burden to establish that the site qualifies as a “significant” aggregate resource site. Whether the site qualifies as a “significant” aggregate resource site is governed by OAR 660-023-0180(3). As relevant here, OAR 660-023-0180(3) imposes two requirements. First, the applicant must establish that there is “more than 2,000,000 tons” of “aggregate material” on the site. OAR 660-023-0180(3)(a). Second, the applicant must establish that “the average thickness of the aggregate layer within the mining area exceeds * * * 25 feet * * *.” OAR 660-023-0180(3)(d)(B)(ii). The dispute in this case concerns both requirements, but the parties’ arguments focus primarily on the OAR 660-023-0180(3)(d)(B)(ii) requirement that the average thickness of the aggregate layer must exceed 25 feet. Petitioner challenges the reasoning the county adopted to conclude that petitioner failed to carry its burden to establish that a significant aggregate resource is present on the site and the evidence the county relied on to support that reasoning.

FACTS

A. The Initial Application

A different proposed aggregate mining site, the Molalla River Reserve (MRR) site, was at issue in *Molalla River Reserve, Inc. v. Clackamas County*, 42 Or LUBA 251 (2002) and *Westside Rock v. Clackamas County*, 51 Or LUBA 264 (2006). The MRR site is located on the south side of the Molalla River in the 100 year floodplain, near the City of Molalla. The site that is the subject of this appeal (the Brinkman site) is located out of the floodplain.

1 The Brinkman site is located immediately south the MRR site, on the south side of
2 Macksburg Road, which divides the two sites.

3 Petitioner’s initial application estimated that the site includes approximately 7.3
4 million tons of aggregate material, which is over three times the legally required amount.
5 Record 1436. The initial application estimated that “the average thickness of the aggregate
6 layer on the site ranges between 50 and 54 feet.” *Id.* Those estimates were based on two
7 deep exploratory borings on opposite sides of the property, one near the western border of
8 the property (referred to as “NB-1”) and one near the eastern border of the property (referred
9 to as NB-2). Record 1456. The information obtained from those two borings was
10 extrapolated to produce two cross-sections, one running north and south (A-A) and one
11 running east and west (B-B). Record 1456-58. Copies of maps from the record showing the
12 location of the cross sections on the property and the extrapolated subsurface geology of the
13 site are attached as Appendices to this opinion (Appendices A-C). Both cross sections show
14 an overburden layer that is generally less than 10 feet thick, followed by a wide layer of
15 aggregate material approximately 50 feet thick until a clayey layer is reached approximately
16 60 feet below the surface of the property.

17 Project opponents’ geologist, O’Gara, submitted a memorandum dated April 9, 2007,
18 to critique the initial application:

19 “After looking at the Goal 5 Report * * * it is evident that the site hasn’t been
20 adequately characterized. There are several reasons why this is * * *
21 apparent. Speaking from experience, it is impossible to get a good evaluation
22 of a site this size based on just two borings. The borings are made to appear
23 as though they show site conditions, they obviously don’t.

24 “There are two cross sections (‘A-A’ and B-B’) shown through the site.
25 There are no borings to base ‘A-A’ on, except for transposing of the borings
26 950 feet off to the side in the case of NB-2 and 700 feet * * * in the case of
27 NB-1. It should be noted that cross section ‘A-A’ is over 2700 feet long.
28 This is over half a mile, and it is based solely on the two transposed borings.

29 “A lot can change in 900 feet. Cross section ‘B-B’ starts in the western edge
30 of the site. It shows that there is about 46 feet of mineable rock at the

1 proposed pit edge. Water well # 14303 is located just 350 feet from the start
2 of cross section B-B. The lithologic log for well 14303 shows that the driller
3 encountered top soil and boulders for the first 11 feet of the boring and then
4 went into weathered basalt from 11-26 feet, followed by hard rock (basalt)
5 from 26-86 feet below grade. As an example, if we were to transpose that
6 boring log 900 feet, which was done in the cross section, it would place this
7 basalt outcrop in the middle of the pit. This would indicate that there is very
8 little mineable rock.” Record 1876-77.

9 O’Gara went on to contend that the well logs in the area provide different data than
10 the two deep borings on the subject property. According to O’Gara, those off-site wells
11 show the presence of boulders, basalt and clay layers that the two on-site borings do not
12 show. O’Gara went on to observe:

13 “As shown by the logs from wells surrounding the site, it appears that there is
14 much more silt, clay, and boulders than what was indicated from the samples
15 that were collected from the test borings at this site. * * * Additionally, the 6-
16 8 inch buckets that were used could not capture any large boulders, or even
17 large cobbles that may have been present in the soil. This would skew the
18 sample away from the larger sizes.” Record 1877.

19 Although the significance of the above comment is not clear out of context, O’Gara later
20 made it reasonably clear that he believed the two borings were insufficient to establish that
21 the requisite quantity and 25 foot thickness of the aggregate layer is present and that the
22 small bucket sampling technique may call into question the quality of the aggregate present:

23 “There need to be significantly more soil borings throughout the site to fully
24 characterize it, particularly on the southern portions. Additionally, several
25 large bulk samples need to be collected to confirm the quality of the rock that
26 is available.” Record 1878.

27 **B. Revised Cross Sections**

28 In response to the above criticism and other criticism of the initial application, the
29 petitioner’s geologist, David Newton, submitted revised cross sections that passed through or
30 close to the two on-site borings. Those cross sections also displayed data from the borings
31 that had been taken in the past on the MRR site to the north. Record 691-92. A copy of a

1 map showing the location of those cross sections and the location of the on-site and MRR
2 borings on which it was based is attached as Appendix D to this opinion.¹

3 At a May 16, 2007 hearing before the board of county commissioners, David
4 Newton, petitioner's geologist, explained that his decision to make his significance
5 determination with only two on-site deep borings was based on other available information
6 from the adjoining MRR site and four on-site test pits:

7 " * * * With me is Jim Newton. Jim works at my company. * * * We were
8 both heavily involved in the [MRR] site across the road immediately adjacent
9 to this site, the Brinkman site. And when we were approached * * * to
10 evaluate this site for significance, the first thing we did [was look at the MRR
11 site]. We had monitoring wells all on that site, the [MRR] site that we used to
12 establish the significance on that site. These are sand and gravel deposits
13 cobbles, boulders * * * and it also met the [quality] standards. So we started
14 there and the other thing we did we looked at the USGS or other geologic
15 mapping in the site area. This is a geologic map published by the U.S.
16 Geological Survey. The Brinkman site is here in the cross-hatch. The [MRR]
17 site I just talked about is down here, just to the northeast and here's the
18 Molalla River so [the MRR site] is in the floodplain; [the Brinkman] site is
19 not. It is elevated above it. The important thing here is to note this green
20 colored geologic unit here. That's mapped as alluvium – alluvium extreme
21 deposit material, sand, gravels, cobbles, boulders and you can see that the
22 Brinkman site and the [MRR site] are all in are all in this same unit mapped as
23 alluvium by the U.S. Geological Survey so given the work we did on [the
24 MRR site] then looking at the extent of the deposits mapped by the USGS, the
25 first conclusion was a pretty good likelihood we're going to deposits over at
26 the Brinkman site. * * * " Record 482-83.

27 Newton went on to explain that four test pits were dug on the Brinkman site with a backhoe
28 and the excavated material was tested and passed ODOT quality requirements.²

29 The opponents' geologist O'Gara submitted a memorandum dated May 10, 2007 in
30 which he continued to question petitioner's choice to rely on only two on-site borings and

¹ Appendix D also shows the location of two additional test pits that petitioner later dug in the southern end of the property farthest from the MRR site and the river. We discuss those test pits later in this opinion.

² The significance of these four test pits is an issue in this appeal. The four test pits apparently were not used to create cross-sections to show the anticipated geology of the site. Rather they were an initial step that was taken before incurring the expense of drilling the two deep borings. According to Newton, these four test pits were dug in the area where the deep borings NB-1 and NB-2 were drilled. Record 1264.

1 took the position that the data produced by the previous borings on the MRR site are not a
2 reliable indication of the geology of the Brinkman site:

3 “First and foremost, the [MRR] site is located on the river bottom area (within
4 the 100 year floodplain), and [the Brinkman] site is up on the terrace (outside
5 of the floodplain). There is a basic rule in evaluating the geology of an area,
6 and that is known as evaluating the depositional environment. * * * High
7 energy environments, such as river channels that migrate across a river valley
8 tend to deposit large particles such as sands, gravels, and cobbles.
9 Conversely, in a backwater area or lake bed, the sediment tends to be much
10 finer grained such as silts and clays.

11 “The depositional environment for the two sites was very different. In the
12 [MRR] site, the proven sand and gravel resource was a result of an active
13 river meandering back and forth through the channel. Essentially, the river
14 had incised itself into the silts and volcanic rocks that are present in the area
15 beneath the terrace, and the ‘ditch’ that the river had cut was filled with gravel
16 that had been carried down the river. In this part of the Willamette Valley,
17 Quaternary Alluvium is only found in the immediate proximity of the river
18 valleys, and not up in the terrace deposits.

19 “The current Brinkman site is at the boundary of the Quaternary Alluvium
20 (the river gravels) and the Troutdale Formation. The Troutdale Formation
21 contains much more clay and much less rock than the alluvial gravels that
22 were tested at the [MRR] site. Since the Brinkman is up on the terrace and
23 not in the river valley or floodplain, the thickness of good, mineable gravels is
24 generally expected to be much thinner. Essentially, it is limited to the gravels
25 that were deposited over the top of the Troutdale Formation during extremely
26 high flood periods

27 “* * * * *

28 “The second reason for not accepting the transfer of data from the lower site
29 to the upper one, is that the distance between the area where the data was
30 collected and the site in question is extreme. If you recall, in my earlier
31 submittal * * * I mentioned that it was not accepted geologic practice to
32 transpose the data from a boring over 900 feet to be used on another cross
33 section. * * *

34 “The same theory applies to taking borings from an area where the
35 depositional environment is a high-energy river (like the [MRR] site), and
36 applying the data to an area that had a depositional environment that was a
37 much less energetic one (like the Brinkman site). The lower-energy
38 depositional environment tends to deposit more of the silts and clays, with
39 occasional surges of flood waters that would produce thin lenses of sands and
40 the occasional gravel bed. If you were trying to use the [MRR] data to show

1 that other locations within the river valley were possible gravel resources, that
2 would not be so much of a stretch. To use the old borings at the [MRR] site to
3 prove that the Brinkman site is significant is making a quantum leap, and
4 cannot be justified by acceptable geologic practice.” Record 599-600.

5 O’Gara also testified at the May 16, 2007 hearing. In that testimony, he reiterated his
6 position that an accurate prediction of the Brinkman site geology cannot be drawn from the
7 MRR data:

8 “[T]ransposing data from the river which is * * * 1300 feet away at the very
9 outside * * * is just not good science, basically. We don’t know what’s there.
10 I can’t tell you there’s not 2 million tons of rock there. I can tell you that you
11 could figure it out if you just do some borings around the area, but it’d be a
12 shame to basically allow this to happen without checking what’s really there
13 and I just don’t think that you know * * * [o]r anybody does.* * *” Record
14 535-36.

15 Opponents’ engineer, Madison, also testified at the May 16, 2007 hearing and
16 criticized the petitioner’s attempt to estimate the Brinkman site geology with data points
17 from only two on-site wells. Madison testified that if the data points from those two on-site
18 wells were compared with data points from six nearby wells located nearby within the
19 mining impact area, rather than the data points derived from the MRR borings, he estimated
20 the average thickness of the aggregate layer would be less than 25 feet. Record 510-12.

21 Later at the May 16, 2007 hearing, Newton again testified regarding the reliability of
22 his significance determination:

23 “* * * Bear with me, * * * if I didn’t think we had enough data to demonstrate
24 significance that I was comfortable with, I wouldn’t be here testifying and
25 arguing about this. [Y]ou know this is a site that’s different from most that
26 we’ve worked on. I said we’ve done quite a few. Because in most cases, it’ll
27 be a new site and it’ll be in the country somewhere and we may have some
28 well logs. We’ll do what we did for this site; look at the geology and look at
29 well logs and look at data and then we’ll come back and say well we need to
30 explore the site so we’ll put borings on the site or trenches and, you know, its
31 kinda normal protocol like we did the [MRR] site and we put – I don’t
32 remember how many – eight borings that’s monitoring wells. We had a dozen
33 test kits so, you know, we did a lot of work down there. Because I need to be
34 certain that we’ve got the rock there so I can advise my client, otherwise, I’m
35 not doing anybody any favors sittin’ here. So [with] this site we happen to
36 have the [MRR site] next door and we had a lot of useful data. Like I said, the

1 U.S. Geological Survey map – this whole area, both the Brinkman and the
2 Molalla Reserve is one unit and it called it alluvial deposits which are stream
3 deposits and it's different from the Troutdale formation. Mr. O'Gara said
4 well that's older and it's finer and yes, it is older and probably was cut into by
5 ancient floods that brought in this gravel, this courser deposits because there
6 was more energy and laid it on top of that Troutdale and low and behold we
7 have a whole new alluvial deposit, a big one and then since then the river has
8 reworked part of it, you know, where the active floodplain is but the way we
9 look at it, it's one deposit. Part of it has just been turned over and re-
10 deposited where the other has been left pretty much as it was after it was
11 formed. * * * [W]e put the the two borings in and like I said, every hole we
12 put in, in that area has exposed the sand and gravel deposits and the thickness
13 – there's never been any question that we were less than 25 feet. You know,
14 we were hittin' 50 feet, 40, 50 feet of this material and its all [aggregate]
15 product * * *." Record 564-65.

16 **C. The Final Proposal and the County's Decision**

17 In an attempt to respond to the concerns expressed by opponents and one of the
18 county commissioners about the limited number of on-site borings, petitioner had two
19 additional test pits dug at the south end of the Brinkman site, farthest from the MRR site.
20 Record 274-81. Appendix D shows the location of these two test pits. Those test pits
21 produced high quality sands and gravels. However, those test pits were only approximately
22 25 feet deep, which is as deep as the backhoe that was used to dig the test pits would allow
23 the pits to be dug.

24 Those two additional test pits generally are consistent with the first 25 feet of the
25 deep borings, although they disclose a top layer of gravelly sand that is slightly thicker than
26 indicated by the deep borings. Opponents minimized the significance of these two additional
27 test pits, because they did not go deeper than 25 feet and therefore could not conclusively
28 demonstrate a 25-foot layer of aggregate material at the test location. Petitioner argued that
29 those test pits established that a thick layer of aggregate material is present on the Brinkman
30 site.

31 At its June 27, 2007 hearing, the board of county commissioners voted to deny the
32 application, with two commissioners verbally expressing concerns about the limited number

1 of on-site borings. In its written decision, which was adopted on July 12, 2007, the board of
2 county commissioners listed several reasons for denying the application; (1) the limited
3 number of onsite borings, (2) reliance on data from the MRR site; (3) data from other off-site
4 wells that shows more varied geology, including boulders and volcanic basalt; and (4) failure
5 to account for the possibility of boulders in the aggregate deposits on-site.

6 **ASSIGNMENTS OF ERROR**

7 **A. Introduction**

8 With three exceptions, which are discussed below, we agree with intervenors that the
9 county's findings are adequate and supported by substantial evidence. The central dispute in
10 this appeal arises from the petitioner's decision to conduct only two deep borings on the site
11 to establish the significance of the aggregate resource. As our explanation of the facts above
12 shows, the opponents' geologist contended that the two borings were fewer deep borings
13 than would typically be required under accepted geologic practice to predict the geology of a
14 site of this size with acceptable confidence.

15 Petitioner's expert did not really argue that two deep borings would typically be
16 sufficient to predict an 83-acre site's geology, and in fact seemed to indicate that more than
17 two borings would be required if the Brinkman site were a typical site. Record 564-66. But
18 petitioner's geologist contended that the Brinkman site is not a typical site, for essentially
19 two reasons. First, the Brinkman site is located next to the admittedly significant MRR site,
20 which has been thoroughly studied in a way that produced an extensive database. Second,
21 USGS maps show the Brinkman site is in the same alluvial depositional unit as the MRR site,
22 making it reasonable (in petitioner's geologist's opinion) to extrapolate data from the MRR
23 site to the Brinkman site.

24 Opponents' geologist does not dispute that the MRR site has been documented to be a
25 significant aggregate site. But opponents' geologist did dispute whether it was reasonable to
26 extrapolate the data from the MRR site to the Brinkman site. The opponents' geologist

1 testified that the Brinkman site is located at the edge of the alluvial unit, as mapped by the
2 USGS, higher on the terrace and adjoining the Troutdale formation. He testified that it could
3 be expected that the Brinkman site would have more silt and clay deposits and a thinner
4 alluvial aggregate deposit because it is at a higher elevation than the MRR site and next to
5 the Troutdale formation. Opponents' geologist and engineer testified that if one relies on
6 data from nearby wells located further from the river to estimate the average thickness of the
7 aggregate layer, rather than the MRR data, the aggregate layer under the Brinkman site may
8 not have the requisite 25 feet of width.

9 To respond to opponents' concerns about the lack of on-site borings, petitioner dug
10 the two additional test pits in the southern area of the property that disclosed a thin layer of
11 overburden and high quality aggregate exists in the top 25 feet where those test pits were
12 dug.

13 Based on our review of the record, which we have summarized and simplified in our
14 recitation of the facts and this introduction, a reasonable decision maker could have
15 concluded that petitioner carried its burden in this case to establish that a significant resource
16 exists on the Brinkman site. But as far as the evidentiary record goes, the county could also
17 have concluded that petitioner failed to carry its burden. The crucial issue in this case is
18 whether the county should look to the nearby off-site well data (as opponents argued), or
19 look to the MRR data (as petitioner argued), to supplement the limited on-site data and
20 predict the Brinkman site geology. On that issue there is conflicting believable expert
21 testimony.

22 The conclusion we reach in the above paragraph, would normally require that we
23 affirm the county's decision. *Bradley v. Washington County*, 47 Or LUBA 11, 19 (2004),
24 *Douglas v. Multnomah County*, 18 Or LUBA 607, 617 (1990). However, the ultimate
25 evidentiary question is an exceedingly close one, which makes the county's findings of
26 particular importance. Petitioner identifies three instances where the county's findings

1 suggest that the county may have misunderstood the evidence or misunderstood the scope of
2 material that qualifies as “aggregate material,” as that term is used in OAR 660-023-0180(3).
3 Remand is required so that the county can clarify those findings.

4 **FIRST, SECOND AND THIRD ASSIGNMENTS OF ERROR**

5 Among the county’s findings in support of its decision are the following:

6 “The surrounding well logs indicate that there is a large degree of variability
7 in the geology of the area. Some well logs indicate large quantities (i.e., 50
8 feet of depth) of aggregate, while others show no mineable rock. Cross-
9 sections that are plotted from the six closest well logs and the two on-site
10 borings yield an average gravel resource thickness of 22.5 feet. *If only the*
11 *well log closest in proximity to the boring on the west side of the Brinkman*
12 *site (well 14303) is relied upon for extrapolating cross sections, the result is a*
13 *large basalt outcrop in the middle of the mine area, which indicates that there*
14 *is very little mineable rock. No test pits or borings were sampled from the*
15 *center of the mining site. The logs from wells surrounding the Brinkman site*
16 *indicate that there is much more silt, clay, and boulders than what was*
17 *indicated from the samples that were collected from the test borings at the*
18 *Brinkman site. The applicant’s cross-sections and analysis of aggregate*
19 *quantity and depth do not address the conflicting evidence provided by well*
20 *logs located in close proximity to the Brinkman site, which further erodes the*
21 *credibility to the applicant’s evidence about the quality, quantity and location*
22 *of aggregate material on the Brinkman site.*

23 “Another criticism of the applicant’s borings at the Brinkman site is that the
24 6-8 inch buckets that were used for the borings could not capture any large
25 boulders, or even large cobbles that may have been present in the soil, which
26 skews the sample away from the larger sized rock. No response was provided
27 by the applicant.” Record 5 (italics and underlining added; citations omitted).

28 In its first assignment of error, petitioner alleges the italicized finding is based on an
29 erroneous assumption that basalt is not aggregate for purposes of the OAR 660-023-0180(3)
30 aggregate significance determination. In its second assignment of error, petitioner alleges the
31 underlined findings demonstrate the county erroneously believed that boulders are not
32 aggregate. In its third assignment of error, petitioner alleges the county erroneously imposed
33 a “mineability” requirement that is not present in OAR 660-023-0180(3). We address those
34 allegations separately below.

1 **A. Basalt Outcrop (First Assignment of Error)**

2 Petitioner first assigns error to the italicized finding above, arguing that the county
3 erred by concluding that the possible presence of a basalt outcrop on the Brinkman site
4 undercuts petitioner’s position that the Brinkman site includes a significant aggregate
5 resource site under OAR 660-023-0180(3). Petitioner concedes the above finding is
6 “unclear,” but petitioner argues the emphasized finding is “clearly a major component of the
7 county’s justification for concluding that the applicant’s evidence of significance failed.”
8 Petition for Review 8.

9 As an initial point, the argument that petitioner provides immediately following its
10 first assignment of error is that basalt is aggregate, and that even if there is a basalt outcrop in
11 the middle of the Brinkman site, such a basalt outcrop would have to be counted in making a
12 significance determination under OAR 660-023-0180(3). In response to that argument,
13 intervenors contend petitioner never argued to the county that a basalt outcrop would have to
14 be counted in determining whether the average thickness of the aggregate layer under the
15 Brinkman site exceeds 25 feet. Intervenors also argue that under OAR 660-023-0180(3) a
16 basalt outcrop would not be counted in preparing an estimate regarding whether the average
17 thickness of the aggregate layer on the Brinkman site exceeds 25 feet.

18 As far as we can tell, petitioner never argued below that a basalt outcrop would have
19 to be counted in making a significance determination under OAR 660-023-0180(3).³ While
20 basalt may fall within the OAR 660-023-0180(1)(a) definition of aggregate, OAR 660-023-
21 0180(1)(I) defines “[t]hickness of the aggregate layer” as “the depth of the water-lain deposit
22 of sand, stones, and pebbles of sand-sized fractions or larger, minus the depth of the topsoil
23 and nonaggregate overburden.” Under that definition, a significant volcanic outcrop would
24 not count in making a significance determination under OAR 660-023-0180(3).

³ The closest petitioner came to making that argument is a statement by Newton that “basalts are pretty good aggregates.” Respondent’s Brief 31.

1 If we only considered the argument that petitioner provided immediately following
2 the first assignment of error, we would deny the assignment of error. That is because
3 petitioner is incorrect that a volcanic outcrop would have to be counted in making a
4 significance determination under OAR 660-023-0180(3). However, later in its petition for
5 review, under the sixth assignment of error, petitioner also argues that the county’s finding
6 regarding the possible presence of a volcanic outcrop is a “fantasy” and not supported by
7 substantial evidence. Petition for Review 40. We consider that argument here.

8 Turning first to whether the cited finding is a major component of the county’s
9 justification for its decision in this matter, we cannot tell for sure. The sentence is worded
10 almost identically to a portion of the testimony of opponents’ geologist O’Gara.⁴ Viewed in
11 context, O’Gara’s statement and the county’s finding may simply be attempting to make the
12 point that the cited off-site well data showed a much more variable geology than the two on-
13 site borings. That variability could call into question the reliability of extrapolating the on-
14 site well data to the whole Brinkman site without regard to whether there is actually any
15 basalt on the Brinkman site. It may also be that the basalt outcrop comment was simply
16 intended as an example of why petitioner’s proposal to transpose data over long distances is
17 not a reliable way to predict the Brinkman site’s geology. However, we cannot disregard the
18 possibility that the county actually believed that well 14303 could be relied on to support a
19 conclusion that there could be a basalt outcrop in the middle of the Brinkman site. As
20 petitioner correctly notes such a supposition would be nearly impossible to square with the

⁴ We quoted earlier from opponents’ geologist’s April 9, 2007 letter in which he was critical of petitioner’s attempt to predict the Brinkman site geology based on only two onsite borings. In the course of that criticism, O’Gara stated:

“The lithologic log for well 14303 shows that the driller encountered top soil and boulders for the first 11 feet of the boring and then went into weathered basalt from 11-26 feet, followed by hard rock (basalt) from 26-86 feet below grade. As an example, if we were to transpose that boring log 900 feet, which was done in the cross section, it would place this basalt outcrop in the middle of the pit. This would indicate that there is very little mineable rock.”
Record 1876-77.

1 more reliable on-site evidence in the record, since one of the deep on-site borings (NB-1)
2 shows a layer of alluvial aggregate that exceeds 50 feet (and no basalt) and NB-1 closer to
3 the middle of the Brinkman site. NB-1 is also located between well 14303 and the middle of
4 the Brinkman site. We agree with petitioner that a reasonable person would not conclude
5 that well 14303 data supports a conclusion that there may be a basalt outcrop in the middle of
6 the Brinkman site.

7 The county is correct in its suggestion that the presence of a large basalt outcrop in
8 the middle of the Brinkman site would undercut petitioner's contention that the site satisfies
9 the significance determination required by OAR 660-023-0180(3). However, the county's
10 apparent finding that the data from well 14303 supports a conclusion that there may be a
11 large basalt outcrop in the middle of the Brinkman site is not supported by substantial
12 evidence. Because that erroneous finding of fact may have been important to the county's
13 decision in this matter, remand is required for the county to address that question.

14 The first assignment of error is sustained.

15 **B. Boulders**

16 Based on the above-quoted underlined findings, petitioner argues the county erred by
17 concluding that an aggregate layer that would otherwise qualify as a significant aggregate
18 resource under OAR 660-023-0180(3) would not qualify as significant if there were boulders
19 present.

20 The findings that are underlined in the first paragraph of findings quoted above
21 conclude that the off-site wells show the Brinkman site may include "more silt, clay, and
22 boulders" than the two on-site wells * * * which further erodes the credibility to the
23 applicant's evidence about the quality, quantity and location of aggregate material on the
24 Brinkman site." Record 5. There does not seem to be any dispute that silt and clay are not
25 accurately described as aggregate. The presence of silt and clay presumably would
26 potentially affect decision making regarding both the "quality" and the "quantity" of

1 aggregate present, and we do not understand petitioner to argue otherwise.⁵ The reason for
2 the county's reference to boulders is much less clear. The reference could be to call into
3 question the reliability of petitioner's on-site evidence concerning aggregate "quality." But
4 the reference could also have been intended to call into question aggregate "quantity." The
5 underlined findings appear to have been taken from O'Gara's April 9, 2007 letter, which is
6 discussed and quoted in part above at the end of section A of our discussion of the facts.
7 O'Gara seems to have made the reference to boulders in the context of questioning the
8 "quality" of the aggregate resource, not the aggregate "quantity." But the county's decision
9 to deny petitioner's application appears to be based exclusively on aggregate "quantity" and
10 focuses almost exclusively on estimates of the average thickness of the aggregate layer.
11 There is no recognizable finding in the county's decision that petitioner failed to carry its
12 burden with regard to aggregate "quality" under OAR 660-023-0180(3) or that any such
13 failure to establish the requisite aggregate quality could be attributable to boulders.

14 In their brief, intervenors do not dispute that boulders qualify as aggregate material
15 under OAR 660-023-0180(3). Intevenors suggest that the county may have been concerned
16 that the presence of boulders calls into question whether the "volume" of aggregate
17 necessary to meet the two million ton requirement is present on the Brinkman site.
18 Intervenor-Respondents' Brief 33. Intervenor also urge that we overlook the county's
19 findings concerning the petitioner's failure to account for the possible presence of boulders
20 in the aggregate layer as a minor part of the county's decision that is at most "harmless
21 error." *Id.*

22 The challenged decision does not suggest that the county believed the possible
23 presence of boulders might affect the "volume" of aggregate present on the subject property,

⁵ In addition to requiring that the applicant establish that there is at least two million tons of aggregate on the site, OAR 660-023-0180(3)(a) requires "[a] representative set of samples of aggregate material in the deposit on the site meets applicable Oregon Department of Transportation (ODOT) specifications for base rock for air degradation, abrasion, and soundness[.]"

1 and we do not see how the volume or weight of aggregate could be materially affected by the
2 presence of boulders. And we do not agree with intervenors that we can assume that the
3 county's concern that there may be boulders present in the aggregate layer on the Brinkman
4 site might not have affected its significance determination under OAR 660-023-0180(3). To
5 the contrary, the county's decision appears to assume boulders are something other than
6 aggregate and that the possible presence of boulders undercuts petitioner's contention that
7 the Brinkman site qualifies as a significant aggregate resource under OAR 660-023-0180(3).
8 If so, that assumption is not supported by the record. Remand is necessary to either (1) adopt
9 findings under OAR 660-0023-0180(3) that do not discount aggregate significance based on
10 the possible presence of boulders or (2) explain why the presence of boulders properly
11 affects the determination of significance under OAR 660-0023-0180(3).

12 The second assignment of error is sustained.

13 **C. Mineability**

14 In its third assignment of error, petitioner alleges the county erred by injecting a
15 "mineable" requirement into the significance analysis that is envisioned by OAR 660-023-
16 0180(3). We do not agree. The most natural reading of the italicized sentence above is that
17 the county did not consider a basalt outcrop or boulders to be mineable rock. We believe the
18 county was simply using that term as a shorthand description of material that qualifies as
19 aggregate material, for purposes of OAR 660-023-0180(3). As we explain above, the county
20 is correct about how a basalt outcrop would be analyzed under OAR 660-023-0180(3) and
21 almost certainly incorrect about how boulders would be analyzed under that rule. But
22 regardless of the correctness of the county's view of how a basalt outcrop and boulders
23 would be analyzed under OAR 660-023-0180(3), its use of a mineability shorthand does not
24 provide a separate basis for reversal or remand. The county did not impose a separate and
25 improper mineability standard in its decision. At worst the county can be faulted for
26 borrowing the opponents' imprecise language in analyzing the evidence and arguments

1 concerning the OAR 660-023-0180(3) significance determination. That imprecise use of
2 language does not give rise to a separate basis for reversal or remand.

3 The third assignment of error is denied.

4 **FOURTH ASSIGNMENT OF ERROR**

5 Petitioner argues the county misapplied OAR 660-023-0180(3) “by requiring that the
6 applicant demonstrate that a 25-foot thickness of aggregate resource exists uniformly within
7 the mining area.” Petition for Review 12.

8 The county did not compute its own estimate of the thickness of the aggregate
9 resource. The county considered the estimate prepared by opponents’ engineer, Madison,
10 which was based on six nearby wells and the two on-site borings. Petitioner concedes that
11 Madison’s estimate is based on “‘averaged’ off-site well log interpretations * * *.” Petition
12 for Review 12. The county also considered petitioner’s estimate, which produced an average
13 estimate relying on the MRR site data and on-site data. The findings quoted above in our
14 discussion of the first through third assignments of error include the following finding that
15 was adopted with others to express the county’s concern that only two on-site borings were
16 available:

17 “Cross-sections that are plotted from the six closest well logs and the two on-
18 site borings yields an *average* gravel resource thickness of 22.5 feet.” Record
19 5 (emphasis added).

20 There is no reason to believe the county misread OAR 660-023-0180(3) to require that
21 petitioner establish that the aggregate layer under the Brinkman site is uniformly present
22 across the subject property at depths in excess of 25 feet. From the record it appears that
23 everyone, including the county, understood that the *average* thickness must exceed 25 feet.

24 The fourth assignment of error is denied.

25 **FIFTH ASSIGNMENT OF ERROR**

26 We are not sure we understand the fifth assignment of error. Petitioner appears to
27 argue the county erred by failing to consider the four test pits that were dug before the two

1 deep borings were drilled. We address that contention in our discussion of the sixth
2 assignment of error below. Petitioner also argues the county failed to consider the two
3 additional test pits that petitioner dug in May 2007. We also address that contention in our
4 discussion of the sixth assignment of error.

5 The fifth assignment of error is denied.

6 **SIXTH ASSIGNMENT OF ERROR**

7 Under its sixth assignment of error petitioner challenges all of the substantive
8 findings the county adopted in support of its decision. We have grouped those challenges
9 and address them below.

10 **A. The County Committed Error by Basing its Decision on Unreliable Off-**
11 **Site Well Data**

12 As we have already explained, in denying the application, the county relied in part on
13 off-site well data that arguably shows a somewhat different geology exists in the areas where
14 where nearby wells were drilled than exists on-site at NB-1 and NB-2.⁶ The opponents'
15 experts urged the county to use that data in conjunction with the data from the two on-site
16 borings to predict the likely depth of the aggregate layer under the subject property.
17 Petitioner's experts urged that the MRR data be used in conjunction with the data from the
18 two on-site borings to project the expected thickness of the aggregate layer on the Brinkman
19 site. Petitioner contends that opponents' off-site well data was not collected by a geologist
20 or under the supervision of a geologist. For that reason, petitioner argues, the off-site well
21 data is a less reliable basis for projecting the geology of the nearby Brinkman site.

22 Petitioner first complains that the opponent's engineer Madison, who analyzed the
23 off-site well data and estimated based on that data that the aggregate layer underneath the
24 subject property may not be 25 feet thick, is not a geologist and therefore unqualified to

⁶ Some of the arguments petitioners present under their sixth assignment of error repeat arguments that were made in support of the first five assignments of error. We do not address those arguments separately under the sixth assignment of error.

1 make that argument. At pages 27 through 33 of the petition for review, petitioner offers a
2 detailed critique of the off-site well data and argues that contrary to Madison's representation
3 to the county and the county's findings, that off-site well data supports petitioner's
4 contention that the aggregate layer under the subject property exceeds 25 feet in depth, on
5 average.

6 Intervenor's respond that petitioner's detailed critique and effort in its brief to
7 challenge Madison's competence to analyze the off-site well data was not presented to the
8 board of county commissioners. Petitioner's experts took the position that even if those off-
9 site wells could be read to suggest there may be boulders and basalt on the subject property,
10 basalt and boulders could be mined. Record 483, 1379. But intervenors contend petitioner
11 never took the position below that those off-site wells support the on-site boring data that
12 shows an approximately 50 foot thick layer of aggregate material on the property.
13 Intervenor's argue that petitioner should not be allowed to present a position to LUBA that it
14 never presented to the board of county commissioners and to suggest, based on that position,
15 that the board of county commissioners' decision is not supported by substantial evidence.

16 We agree with intervenors that petitioner does not appear to have taken the position
17 that the data from those off-site wells is actually *consistent* with the data produced by the on-
18 site borings. We also agree that petitioner cannot fail to challenge the opponents'
19 contentions below that the data from those wells is inconsistent with the data from the on-site
20 wells and then argue for the first time at LUBA that the data from those wells is consistent
21 with the on-site data. *See Wal-Mart Stores, Inc. v. City of Bend*, 52 Or LUBA 261, 279
22 (2006) (where issues are raised that undercut an applicant's presentation and those issues are
23 not responded to, it is not unreasonable for a decision maker to cite those issues in
24 concluding that the applicant failed to carry its burden of proof). In addition, if petitioner
25 believed the data from those well logs was unreliable because it was not collected under the
26 supervision of a geologist or believed that data in fact supported its contention that the

1 average thickness of the aggregate layer under petitioner’s property exceeds 25 feet, it should
2 have asserted that position to the county. Because petitioner did not do so, the county did not
3 have reason to consider those questions and it was not unreasonable for the county to rely in
4 part on that off-site well data to conclude that petitioner’s on-site borings are not sufficient to
5 demonstrate a significant aggregate resource is located on the subject property.

6 This subassignment of error is denied.

7 **B. County Failure to Acknowledge and Consider all Six Test Pits**

8 As we noted earlier in this opinion, petitioner dug four test pits before the two deep
9 borings were drilled. According to petitioner the aggregate material from those test pits was
10 tested and found to meet quality requirements, and the county should have considered those
11 four test pits in determining whether petitioner carried its burden to demonstrate a significant
12 aggregate resource is present on the site.

13 As intervenors point out, petitioner apparently did not use data from those test pits to
14 prepare the cross-sections that were the main subject of debate during the proceedings below,
15 and the record does not disclose the content of those initial four test pits. We agree with
16 intervenors that given the lack of importance petitioner apparently assigned to those initial
17 four test pits, the county’s lack of recognition of those four initial test pits is not error. We
18 also note that those initial test pits reportedly were dug in the same areas where the two deep
19 borings were later taken. Therefore, those four test pits at most would presumably confirm
20 the data obtained from the first 25 feet of the two deep borings. The county’s failure to
21 specifically acknowledge the initial four test pits was not error, or, if error, that failure was
22 harmless error.

23 Petitioner also challenges the following county finding concerning the two additional
24 test pits that were dug in May 2007:

25 “After significant questions had been raised about the adequacy of relying
26 upon only two borings for the application, after the hearing the applicant
27 submitted results from two more shallow ‘test pits’ that were about 25 feet

1 deep to supplement the record. No explanation of why additional borings
2 were not drilled has been provided. Conflicting analysis of the test pits [was]
3 submitted into the record. *Newton Consultants concludes that the test pits*
4 *demonstrate that the aggregate exceeds 25 feet in depth. However, Mr.*
5 *Madison testified that the test pits demonstrate that less than 25 feet depth of*
6 *gravel [is] present.* Mr. Madison explained that the Newton Consultants
7 Cross-Section (A-A and B-B) are misleading because like other Newton
8 Consultant analysis, they include data from the MRR site borings, which were
9 taken within the floodplain. When the MRR site data is excluded from the
10 cross-sections, Mr. Madison estimates that the aggregate depth is only 18.4
11 feet (cross section A-A) and 21 feet (cross section B-B). Mr. Madison also
12 called into doubt the ability of the approximately 25 foot test pits to project
13 the depth of potential aggregate 50 feet deep.” Record 5 (emphasis added;
14 citations omitted).

15 Most of petitioner’s challenge to the above finding is based on its position that it was
16 error for the county to put as much emphasis as it did on inferior off-site well data and to de-
17 emphasize the superior quality on-site test pits. We have already addressed petitioner’s
18 criticism of the off-site well data. As far as the county’s failure to assign much weight to the
19 two May 2007 on-site 25-foot test pits goes, the county seems to have followed the parties’
20 lead in failing to recognize what those test pits show and instead focusing on what those test
21 pits do not and could not show.

22 Turning first to what those test pits show, the two test pits at the south end of the
23 Brinkman site are generally consistent with the deep borings and offer some additional
24 evidence that the data points from those deep borings can reliably be extrapolated elsewhere
25 on the site.⁷ Those test pits also confirm the presence of high quality aggregate in the area 25
26 feet below the surface, but because overburden occupies part of that 25-foot area the test pits
27 can only confirm a layer of aggregate material that is 20+ feet, but less than 25 feet.

28 Petitioner claimed that those two test pits confirm an aggregate layer of more than 25
29 feet. Those test pits do not confirm an aggregate layer of *more than 25 feet*. While it may be

⁷ In fact, the test pits show a layer of “Well Sorted Gravel with Sand” that is at least 20 feet thick, which is slightly thicker than shown by the two Brinkman on-site borings and quite a bit thicker than the deep borings on the significant MRR site. Record 279, 281.

1 unlikely that the 20+ foot thick layer of aggregate that the test pits did confirm would
2 suddenly end if the pits were dug deeper, the test pits cannot and do not confirm the geology
3 past the bottom of the 25-foot pit. The county's description of the engineer's testimony can
4 be read to suggest the county believed the test pits confirm an aggregate layer of *less than 25*
5 *feet*. The test pits do not do that either. Perhaps reasonable persons could speculate
6 differently about what a deeper pit would confirm, but a 25 foot pit only confirms the
7 geology within 25 feet of the surface where the test pit was dug.

8 To summarize, the county's findings do not demonstrate that the county appreciated
9 the two most important points that the test pits demonstrate. The test pits show a layer of
10 aggregate that is at least 20 feet thick in the locations of the Brinkman site where the test pits
11 were dug, and the aggregate layer in those locations showed no signs of diminishing when
12 the 25 foot limit was reached. The test pits also show that the geology of the top 25 feet of
13 the Brinkman site in the two test pit locations is similar to the geology disclosed by the two
14 deep borings located elsewhere on the Brinkman site. Both of those points seem significant
15 to us because all parties seem to agree that actual on-site testing is the most reliable way to
16 estimate the Brinkman site's geology. The county's decision does not seem to recognize or
17 assign any significance to either point. The county seems to have been distracted by
18 petitioner's argument that overstates the significance of the test pits in arguing they establish
19 an aggregate layer of more than 25 feet and by the opponents' argument that similarly
20 overstates the significance of the test pits by suggesting the test pits demonstrate that the
21 aggregate layer in the location of the test pits is less than 25 feet thick. On remand the
22 county must make it clearer that it understands the significance of the two additional test pits
23 in reaching its decision and explain how that evidence affects its decision concerning
24 whether petitioner carried its burden under OAR 660-023-0180(3).

25 This subassignment of error is sustained in part.

1 **C. Petitioner’s Reliance on MRR Site Data**

2 Petitioner next challenges the following finding:

3 “The applicant also relies heavily on the borings of the MRR site to support
4 the applicant’s conclusions about the significance of the aggregate at the
5 Brinkman site. The Board is not persuaded by borings of the MRR site,
6 because the MRR site is within the aggregate accumulating 100-year
7 floodplain of the Molalla River, but the Brinkman site is not. There is no
8 evidence in the record explaining why data from a site located within the
9 floodplain (the MRR site) is representative of the aggregate deposit in an
10 upland terrace location outside the floodplain (the Brinkman site). Given the
11 differing proximity to the floodplain and related geology of the two sites, the
12 MRR site borings cannot be relied upon as a [sic] adequate information
13 characterizing all of the aggregate material for the Brinkman site.” Record 5.

14 Petitioner first disputes the county’s characterization that petitioner “relies heavily”
15 on the MRR site borings to conclude that the Brinkman site is a significant aggregate
16 resource site. That characterization seems reasonably accurate, given petitioner’s geologist’s
17 concession that in a more typical situation (where there is not a thoroughly-studied adjacent
18 site) more borings would have been drilled.

19 With regard to the question of whether the county erred by faulting the petitioner for
20 using the MRR data to bolster or confirm its limited on-site data, for the reasons explained in
21 our introduction to petitioner’s assignments of error, we do not agree that the county
22 necessarily erred by relying on the opponent’s expert to conclude that the MRR site data is
23 not a reliable basis for predicting the Brinkman site geology. The considerations the county
24 will need to address to respond to our remand could also lead the county to revisit this issue
25 and reach a different conclusion regarding whether it is appropriate to rely on the MRR data.
26 However, based on the decision and record that is before us in this appeal, we cannot say that
27 it was error for the county to rely on the opponent’s expert rather than petitioner’s expert
28 regarding whether the MRR data should be relied upon in part to predict the geology of the
29 Brinkman site.

30 This subassignment of error is denied.

1 **D. Petitioners’ Remaining Arguments Under the Sixth Assignment of Error**

2 We do not consider petitioner’s other subassignments of error, which challenge other
3 county findings. Those challenges either raise issues we have already addressed or raise
4 issues that need not be addressed in view of the conclusions we reach above.

5 The sixth assignment of error is sustained in part.

6 **CONCLUSION**

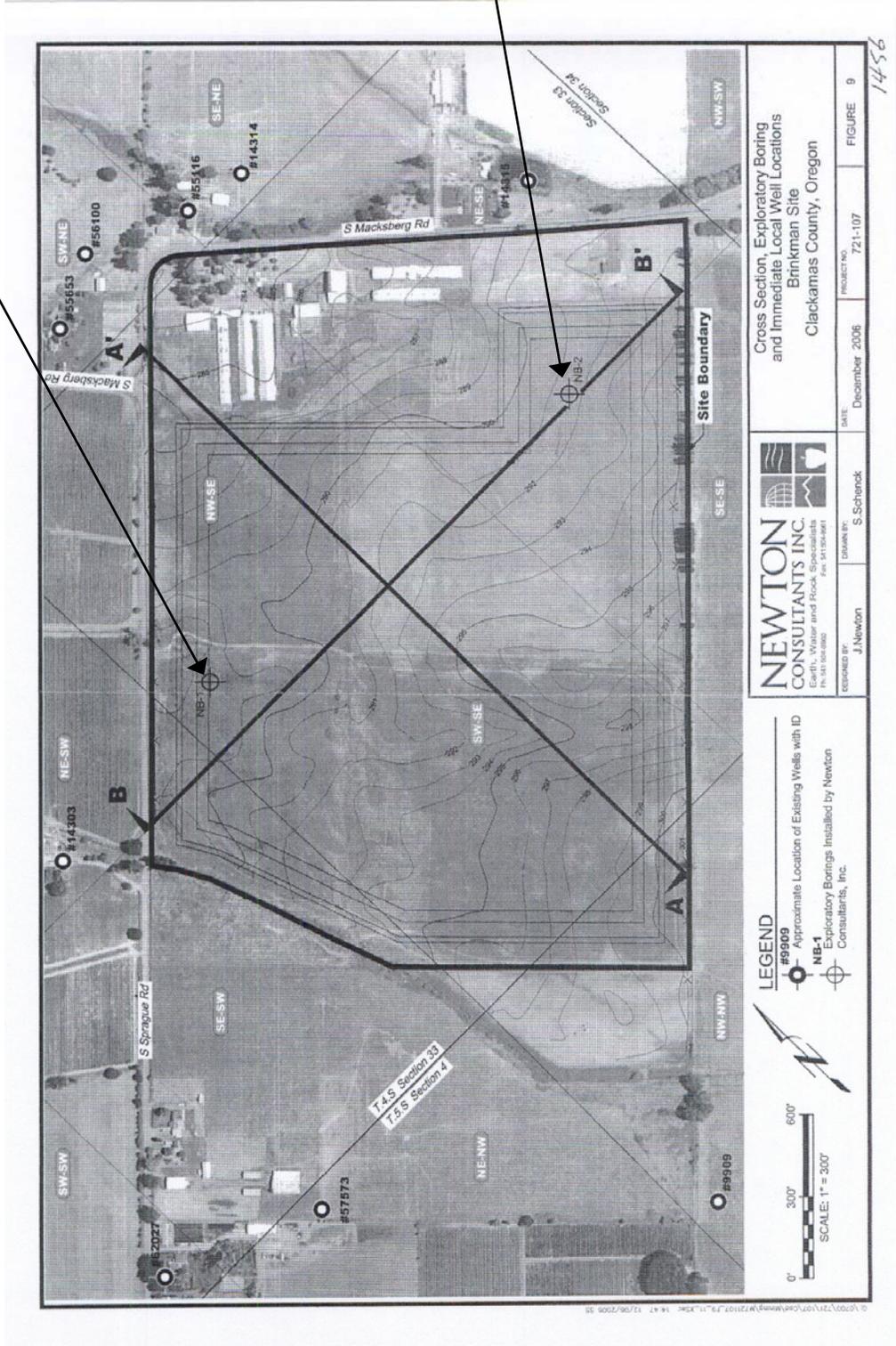
7 The county found that petitioner’s case that the Brinkman site qualifies as a
8 significant aggregate resource under OAR 660-023-0180(3) is diminished by the possible
9 presence of a large basalt outcrop in the middle of the site. We conclude above that that
10 finding is not supported by substantial evidence. The county also found that petitioner’s case
11 that the Brinkman site qualifies as a significant aggregate resource under OAR 660-023-
12 0180(3) is diminished by the possible presence of boulders on the Brinkman site. That
13 finding is either erroneous or inadequately explained. Finally, the county’s findings
14 regarding the significance of the two additional on-site test pits appear to fail to appreciate
15 the actual significance of those test pits. It is possible that any one of these failings, alone,
16 might not provide a basis for remanding the county’s decision, if we could assume they were
17 a minor or an unimportant part of its ultimate decision. But we cannot assume they were
18 minor or unimportant parts of the county’s decision, and collectively they call into question
19 whether the county properly analyzed the evidence and the law in reaching its decision in
20 this matter.

21 The county’s decision is remanded.

Appendix A

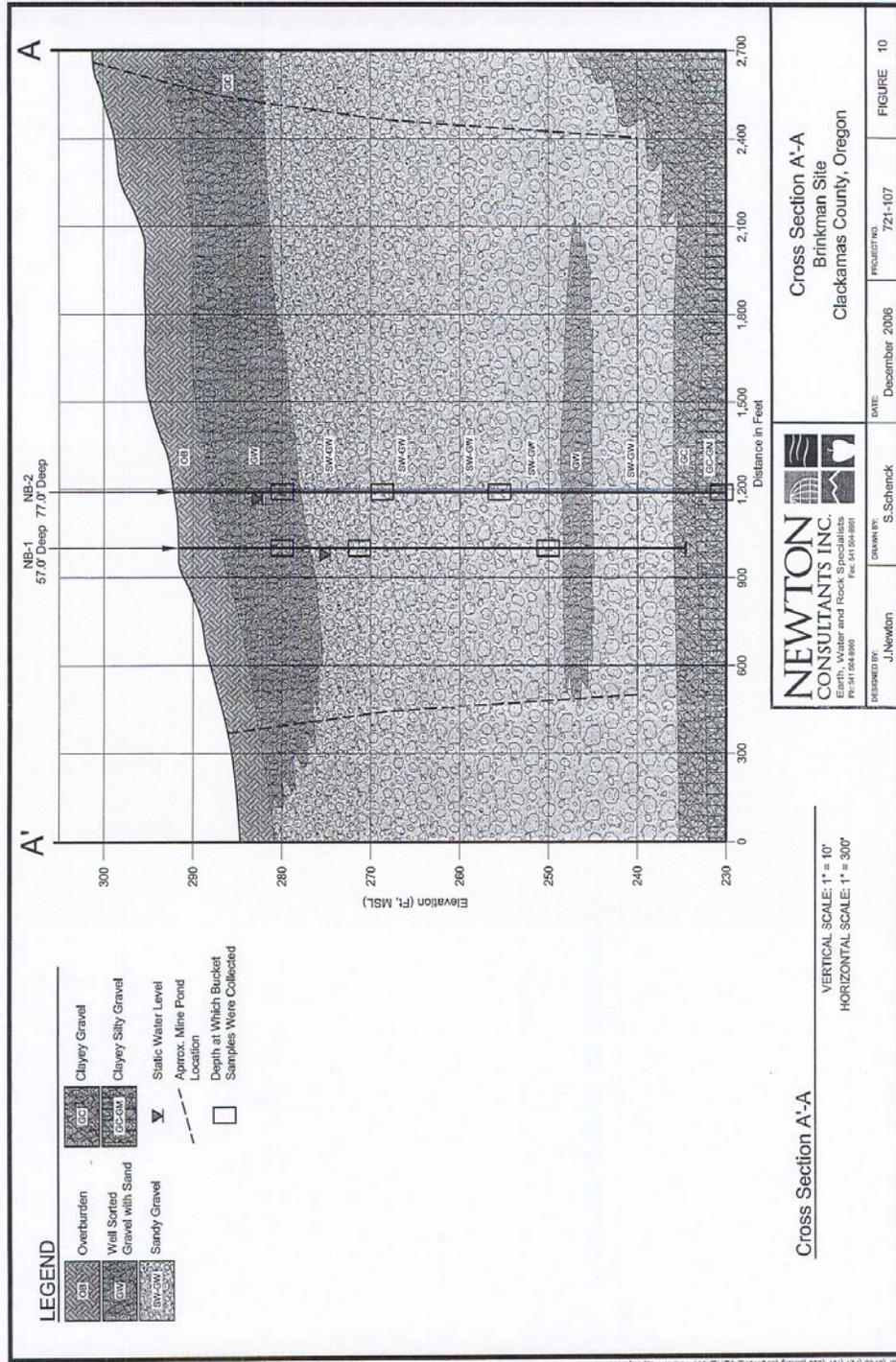
NB-1

NB-2

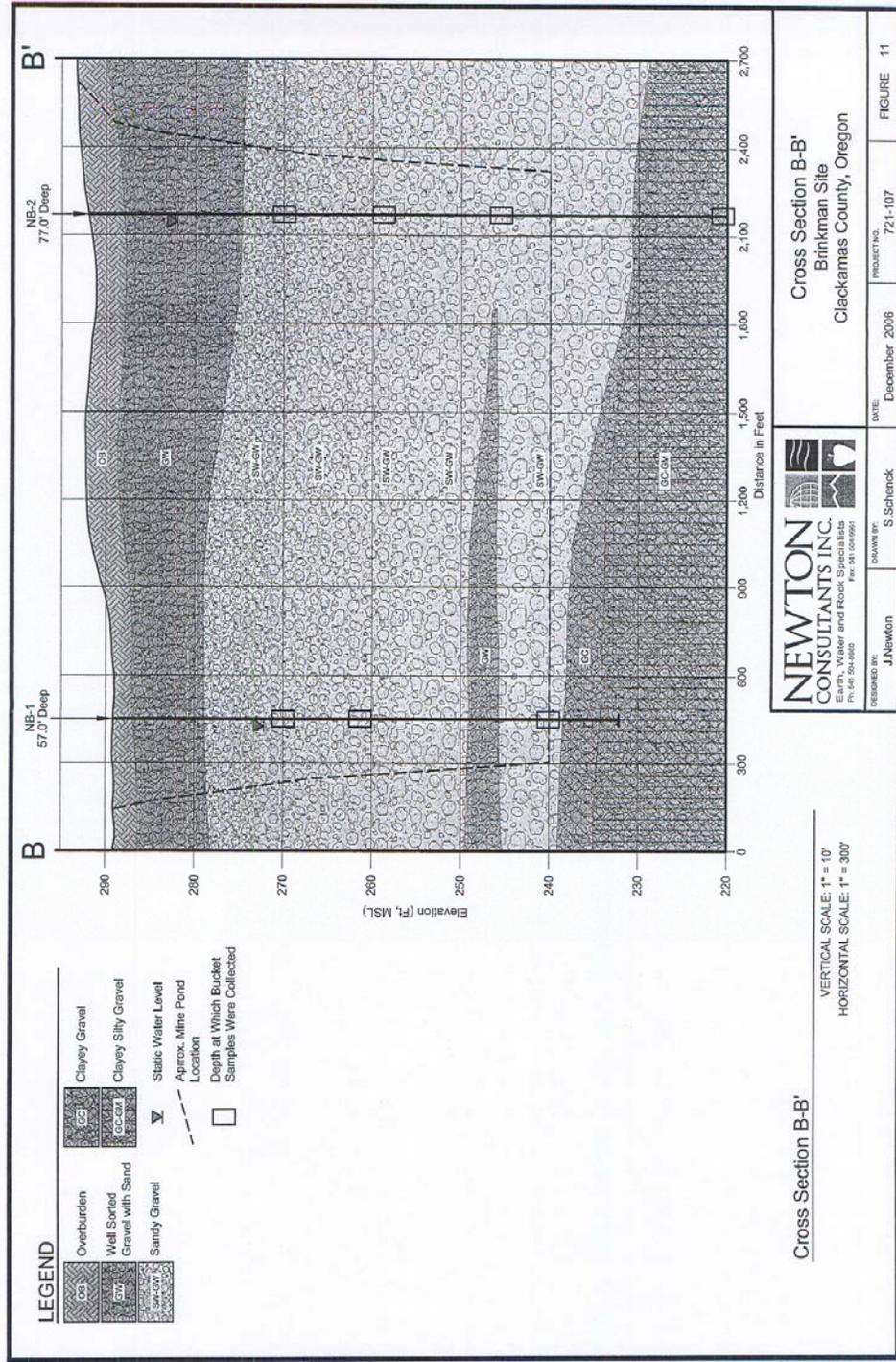


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Appendix B



Appendix C



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Appendix D

