



Inver Grove Heights Planning Commission
Tuesday, May 2, 2023 at 7:00 PM
8150 Barbara Avenue, Inver Grove Heights, MN 55077

AGENDA

NOTICE TO RESIDENTS: Individuals may submit written public comments in advance of the meeting by emailing comments to Stacy Bodsberg (sbodsberg@ighmn.gov). Comments received prior to 4:00 p.m. on Tuesday, May 2, 2023, will be provided to the Commission at or before the May 2, 2023 meeting.

1. **Call to Order**
2. **Roll Call**
3. **Consent Agenda**
 - A. Consider Approval of the April 18, 2023, Regular Planning Commission Meeting Minutes.
4. **Public Hearings**
 - A. Consider a Request by Michael & Kathleen Goehring, 11331 Albavar Path, for a Variance from the minimum lot size to adjust a property boundary to provide access to a landlocked piece of property at 11335 Albavar Path. (Case No. 23-15V)
 - B. Consider a Request by Bruce Lenzen Design Build for a Variance to allow an accessory building greater than the maximum of 2,400 square feet on the property at 11880 Albavar Path. (Case No. 23-16V)
 - C. Consider a Request by Eric Gunderson for a Rezoning from R-3C, Multiple Family Residential to R-1C, Single Family Residential and a Comprehensive Plan Amendment from MDR, Medium Density Residential to LDR, Low Density Residential for the property identified as PID No. 20-71161-00-016. (Case No. 23-17ZPA)
 - D. Consider a Request by Bituminous Roadways, Inc. for a Sand and Gravel Zoning District Designation Five (5) Year Renewal. (Case No. 22-37ZC)
5. **Regular Business**
6. **Commission and Staff Comments**
7. **Adjourn**

This document is available upon a three (3) business day request in alternate formats such as braille, large print, audio recording, etc. Please contact Stacy Bodsberg, Community Development Support Specialist, at 651.450.2545 or sbodsberg@ighmn.gov.

May 2, 2023 - Planning Commission Agenda

PLANNING COMMISSION MINUTES - CITY OF INVER GROVE HEIGHTS

Tuesday, April 18, 2023 – 7:00 p.m.
City Council Chambers – 8150 Barbara Avenue

1. CALL TO ORDER

Chair Niemioja called the Planning Commission Meeting to order at 7:00 p.m.
The Pledge of Allegiance was recited.

2. ROLL CALL

Commissioners Present: Elizabeth Niemioja (Chair)
Scott Clancy (Vice Chair)
Robert Heidenreich
Joan Robertson
Jonathan Weber
Dennis Wippermann
Kate Challeen

Commissioners Absent: Jaime Besser (excused)
Vacant

Staff Present: Allan Hunting, City Planner
Heather Botten, Associate Planner
Stacy Bodsberg, Community Development Support Specialist

3. APPROVAL OF MINUTES

A. Approval of Meeting Minutes from the April 4, 2023, Regular Planning Commission Meeting.

The meeting minutes from April 4, 2023 were approved as submitted.

4. APPLICANT REQUESTS AND PUBLIC HEARINGS

A. Consider a request by Jersey's Bar & Grill, 6449 Concord Boulevard, for a Variance from the exterior building material requirements and the side setback requirements for a new structure. (23-11V)

Reading of Public Notice

Commissioner Weber read the Public Hearing Notice to consider the request for Jersey's Bar & Grill, Case No. 23-11V. The request involves property located at 6449 Concord Boulevard and consists of a variance for the exterior building material requirements to allow a structure with steel siding and a setback from the neighboring property. Notices were mailed to six (6) property owners on March 31, 2023.

Presentation of Request

Associate Planner Heather Botten discussed the request for property located on the west side of Concord Boulevard, north of 65th Street. The property is zoned B-3, General Business District. To the north it abuts R-1C, Single Family Residential District. The applicant requests a variance from the siding requirements and setbacks to allow a shipping container to be used as a seasonal bar on the applicant's property, the outdoor patio. The structure is approximately 160 square feet in size and would be located about 10 feet from the northern property line.

City Code requires all structures in the B-3 District maintain at least a 75-foot setback from an R-1, Residential District. Code also requires at least 50% of the exterior surface of a building be either brick, textured or concrete block, lap siding, natural stone, or glass. Concord Boulevard has a mix

of building types and exterior building materials. The intent of the exterior building material ordinance is to require all commercial and industrial buildings to have a high grade of materials for aesthetic and valuation purposes. In order to help redevelop the Concord area, staff believes that all structures, seasonal or temporary, comply with the current ordinance.

This structure would have windows that open up/fold down when not in use and double doors for access purposes. Due to the historical area of Concord Boulevard, many buildings do not comply with setback requirements. The existing bar/restaurant is considered a legal non-conforming structure as it does not comply with the 75-foot setback to the northern lot line. Any type of addition/improvements for a structure would need a variance. Code does not have any flexibility for accessory structures in a commercial/industrial district. They would have to comply with the principal structure setback.

This property is unique in that the 10-foot setback complies if the lot to the north was zoned commercial or if it was a residential accessory structure. The property is guided mixed use with housing mixed in with commercial and industrial areas.

Staff believes approving the exterior building material variance could set a precedent for other accessory buildings in commercial and industrial areas. Staff does not believe the criteria to meet a practical difficulty has been set; there are other options such as putting approved materials over the steel siding or constructing a building to meet code requirements. Staff supports the setback variance, the fact that the existing building is legal non-conforming, and that the code does not allow for reduced setbacks for the accessory types of uses. Based on information and criteria in the report and conditions listed, staff recommends denial of the exterior building materials and approval of the setback variance. Staff has not heard from any of the surrounding property owners.

Chair Niemioja asked if there has been staff consideration on making a change to a portion of the ordinance to cover shipping containers because it is an area of growth.

Ms. Botten responded staff has not received direction for an ordinance change. She said there has been a couple of inquiries from other businesses to allow shipping containers on the property. One of the suggestions for a request is to amend the zoning code. This is the first request for a variance to come forward.

Opening of the Public Hearing

William Ashton, 6449 Concord Boulevard, stated he has read and understands the report. He said he understands why the city would not want steel exterior. He said his plans were to make it look nice. They would do custom paint jobs, it would not rust, it would look nice there.

Chair Niemioja asked if there were options to build a different structure and why the shipping container had to be the structure.

Mr. Ashton responded that cost was a factor. He said there is an abundance of shipping containers. He thought it went well with the area and with the trains going by, it seemed to fit.

Commissioner Clancy said it was a seasonal use bar and asked if it would stay in its location or moved around with the seasons.

Mr. Ashton responded it would be seasonal. It is set up for them to be able to rent out when not in use. A crane could pick it up and take it where needed. It could be rented out in the winter.

Commissioner Heidenreich asked if it would have sprinklers and sanitary water inside.

Mr. Ashton replied it would have full plumbing and electrical. There would be quick disconnects on everything.

Commissioner Heidenreich asked if that included the drains.

Mr. Ashton responded that it includes the drains; it would be drained into the city sewer/street.

Commissioner Robertson mentioned that she was initially unsure of the shipping container and asked Mr. Ashton what prompted him to use one for this use.

Mr. Ashton replied it was a hot item at the moment, a lot of people are starting to use them as mini houses or making large homes out of them.

Commissioner Robertson asked if the intent was to do something creative with it on the outside.

Mr. Ashton replied that he wanted to get good paint or wrap designs. He said if it wasn't approved, siding could be used, it would not be a problem.

Commissioner Robertson asked if knowing code, why he wished to pursue using it as it is.

Mr. Ashton responded that he believes it goes with the area. Concord Boulevard is an industrial area, with the trains going by, he felt it would look pretty cool.

Commissioner Clancy asked if it was more cost effective to use the premade box or if he had investigated using other cost-effective options.

Mr. Ashton responded that it was more cost effective to use as an existing structure.

Chair Niemioja closed the Public Hearing.

Planning Commission Discussion

Chair Niemioja stated that to her, it was an ordinance amendment with the materials. She does not see a practical difficulty. She agreed with the applicant that the aesthetic was really cool for the area; it's right by the train tracks. She agreed that shipping containers are becoming a very popular trend.

Commissioner Heidenreich said he was unsure it was a practical difficulty; the Commission has approved shipping containers in the past on Barnes Avenue and Rich Valley. One was approved last year for NSP to put on an industrial park along with exceptions. It was for the natural gas treatment plant for Flint Hills, they use a shipping container.

Commissioner Weber said the idea of a shipping container was awesome for a bar like this because of the security features. Building a wood structure could be broken into, a shipping container would not be as likely. He has noted them used for bars in downtown Minneapolis. He said it was very creative and thoughtful. He said it was hard to come up with a practical difficulty, but was something that could be discussed in the ordinance and get an amendment done.

Commissioner Robertson said she thought the practical difficulty was the ordinance, which could be a stretch. She recommended it because she thought there was sound rationale for recognizing this particular request as appropriate in the area. She believes the rationale is superb. She was unsure what a practical difficulty would be.

Commissioner Weber believed from a Planning Commission standpoint, the only way they can get past this would be to deny because it does not fit the practical difficulty under land use in the ordinances. He said the Planning Commission could make a strong suggestion to the City Council

to review the ordinance to change and allow this use.

Chair Niemioja agreed with Commissioner Weber because it was subjective and difficult to say the ordinance is out of date frequently. She said this was a neat, new thing.

Commissioner Robertson questioned the timing. If putting forward a request to the City Council that they review the ordinance, she asked how that impacts the timing for the applicant. She was interested in what this does to the applicants timing to be able to do this project.

Mr. Ashton responded if denied by the Council, they would side it and get it going as soon as they could.

Commissioner Wippermann said it was nice to have a business investing in their operations. The patio and new fencing that have gone up looks very nice. He said he has a tough time thinking that metal containers add to the attractiveness of a neighborhood. Dressing it up and using the siding as mentioned, can comply. He was concerned about the precedent the use of shipping containers would set for use in other locations/areas in the city.

Planning Commission Recommendation

Motion by Commissioner Weber, second by Commissioner Clancy, to deny the variance on the exterior materials for lack of a practical difficulty with a strong suggestion to the City Council and staff to look at the City Code to find a way to work this problem out for property located at 6449 Concord Boulevard, Jersey's Bar & Grill.

Motion carried (7/0).

Motion by Commissioner Weber, second by Robertson, to approve the variance to allow the structure with the reduced side yard and rear setbacks with the practical difficulty listed for property located at 6449 Concord Boulevard, Jersey's Bar & Grill.

Motion carried (7/0). This item goes before the City Council on May 8, 2023.

B. Consider a request by Staples Land Co. LLC, 10093 Rich Valley Boulevard, for a Preliminary Plat and Variance from lot frontage for a four-lot subdivision to be known as Rich Valley Ranch. (23-12SV)

Reading of Public Notice

Commissioner Weber read the Public Hearing Notice to consider the request for Staples Land Co. LLC., Case No. 23-12SV. This request involves property located at 10093 Rich Valley Boulevard and consists of a preliminary plat for a four-lot subdivision known as Rich Valley Ranch and variances for the minimum lot frontage requirements for Lots 2, 3, and 4 and any other related variances. Notices were mailed to 72 property owners on March 31, 2023.

Commissioner Clancy stated that he needed to recuse himself from this vote due to a conflict of interest from the city and the applicant.

Presentation of Request

Associate Planner Heather Botten discussed the request zoned agricultural, located on the west side of Rich Valley Boulevard off of Adam Avenue. The applicant proposes subdividing the lot into four single family lots. The lot is 30.46 acres in size with proposed lot sizes between 5 to 10 acres. The property is zoned agricultural which requires a minimum of five acres per lot for the subdivision. The preliminary plat shows lots 2, 3, and 4 without direct road frontage to Rich Valley. Due to this, the applicant requests variances for the three lots because they do not meet the 30-

foot required road frontage.

The proposed four lot subdivision is consistent with the zoning and comprehensive plan designations. There is a 200-foot NSP easement that runs along the northern part of the property. There would be four building pads on the proposed lots. The applicant proposes one shared access point off of Rich Valley Boulevard. The location of this access has received a variance from Dakota County to allow all four lots access to the shared driveway.

Engineering has reviewed the plans and are working with the applicant on finalizing any stormwater management on the site. Park dedication would be cash in lieu of land. The applicant has requested the city consider vacating a trail easement that runs along the northern part of the property. The Parks and Recreation Director has suggested the city retain this easement for possible future trail. To note, there is not an actual trail proposed at this time.

A variance is requested for lots 2, 3, and 4. The lot sizes proposed are not out of character for the neighborhood and are consistent with the comprehensive plan. The property is unique because there is 680 feet of frontage with over 200 feet of that under easement. Designing a plat that complies with the road frontage requirements would have flag lots and may trigger the need for other variances such as minimum width requirements. The property is located along Rich Valley Boulevard, a county road. The county would not allow additional access points. Even if the lots were configured differently, they would still need to have a shared access point.

Based on the information presented and included in the staff report, staff supports the plat and variances as proposed with the conditions listed. Staff has heard from three residents; two had general questions, and one stopped in inquiring if there were any changes from the neighborhood meeting held last year.

Planning Commission Discussion

Commissioner Weber questioned if there were multiple neighborhoods on Rich Valley Boulevard that have shared access, the variance for this is not uncommon along Rich Valley. The trail easement was news to him, he lives in the area. He questioned where the trail would go to the west. He said there was a road easement off Agatha Avenue. He asked if that would stay existing because there was no connection here or if it would be vacated to a cul de sac.

Associate Planner Botten replied the road frontage variances are not uncommon. She addressed the trail direction to the west stating it doesn't go anywhere. She said that Agatha Avenue has not been decided yet, it would likely be a decision the City Engineer would make.

Commissioner Weber mentioned a concern that was voiced to him was if there was a deeded easement, what stops Lot 4 from bringing a driveway through from that road.

Associate Planner Botten replied topography is a challenge. The applicant looked at access points going off of Adam and Agatha and found that it was not feasible. She suggested having the Public Works Department look into this.

Commissioner Wippermann asked if the properties would be zoned E-1.

Associate Planner Botten replied they would not, they would stay agricultural.

Opening of the Public Hearing

Danielle H. Staples, 10093 Rich Valley Boulevard, stated she has read and understands the report. She said they envisioned using the land to enrich their own families and give back to the Inver Grove Heights community. She said her dad was the Inver Grove Heights Baseball President Association for many years, they spent a lot of time at Rich Valley Park playing Heat Soccer. When the land nearby was available in 2022, they jumped at the chance. Since then, they have been working with city staff, engineers, Dakota County engineers, and numerous environmental experts to find the best way to subdivide the property. In their opinion, four lots was a better use of the

land. They have worked to place a shared driveway onto County Road 71 and settled on a design that exceeds safety requirements. They opted to create a 24-foot-wide road for the access point. She said they would appreciate the Commissions support of the subdivision.

Chair Niemioja closed the Public Hearing.

Planning Commission Recommendation

Motion by Commissioner Weber, second by Commissioner Challeen, to approve the preliminary plat with the six conditions listed for property located at 10093 Rich Valley Boulevard, Staples Land Co. LLC., Case No. 23-12SV.

Motion carried (6/0).

Motion by Commissioner Weber, second by Commissioner Wippermann, to approve the variance for the minimum road frontage for lots 2, 3, and 4, subject to the one condition listed, with the rationale and practical difficulty listed for property located at 10093 Rich Valley Boulevard, Staples Land Co. LLC., Case No. 23-12SV.

Motion carried (6/0). This item goes before the City Council on May 8, 2023.

C. Consider a request by IGH Partners, LLC., for a Final Plat and Planned Unit Development to construct a proposed apartment and townhome development on the property located near the intersection of Diffley Court and Highway 3, and on PID #'s 20-64442-00-010, 20-64440-01-010, and 20-64440-00-010. (23-13SPUD)

Presentation of Request

City Planner Allan Hunting discussed the final plat and final PUD plans for the plan called Robert Curve, 4th Addition located at Diffley and South Robert Street. This will develop the balance of the property. The City Council approved the balance of the plans in December. This Commissions review focuses on the conditions of approval and if the final plans are consistent with the preliminary. Staff has reviewed the 12 conditions.

The development consists of a 190-unit apartment building and 54 townhome units on the southern side. There are stormwater treatment areas, the auto repair site, Casey's gas station, and a liquor store located at the end.

- Staff finds the final plans to be consistent with the preliminary.
- Engineering is still working on the review and will be finished by the time this goes before the City Council. No issues have been noted.
- Staff is still waiting on comments from MnDOT; they would be looking for drainage. This needs to be addressed and finalized before it goes before the City Council.
- A development contract and related agreements will address maintenance, management of stormwater, and open space.
- As a rental property, this would be maintained by a property maintenance management company. That company would be responsible, per the development agreement, for all maintenance. There would not be a Homeowners Association.
- Park Dedication fees have been worked out. Because this is within the Joint Powers Agreement with the City of Eagan, the developer pays the greater of the two fees. Inver Grove Heights receives a portion of the fees.
- The City Council added a condition on a parking analysis. The developer had shown less parking for the apartment building. A parking demand analysis was provided and done by a traffic consultant. Staff reviewed and was comfortable with the numbers provided.

Staff recommends approval of the final plans as presented.

Planning Commission Discussion

Commissioner Challeen questioned the open space condition and where the open space was.

City Planner Hunting replied there is open space, the plan was not included in the Commission packets. There is a significant amount of open space around the buildings due to trails and the perimeter areas of the project. The required amount of open space has been met. Improvements cannot be done on them. Those areas would have to be maintained by them, not the city.

Commissioner Robertson asked if fire has looked at this in terms of access, particularly in the townhome area.

City Planner Hunting responded that a preliminary review looked at the lanes. The Fire Marshal would verify and do their final review. There were no issues from the preliminary stage.

Commissioner Robertson asked if the access points into the development could be reviewed.

Mr. Hunting replied the public street, Diffley Court, is already in place. The apartment would have access coming off the end of it. There is another point for additional parking. A section of townhomes would have an opening driveway and another opening serving the turnaround for the units.

Commissioner Robertson questioned if access into the whole development comes off of Robert Street.

Mr. Hunting replied it all comes off of Robert Street and Diffley at the stoplight intersection.

Chair Niemioja asked what the delineation was between the properties towards the back.

Mr. Hunting responded that it abuts the railroad. There are small retaining walls.

Commissioner Weber mentioned that the railroad company has a fence that runs the entire length. Andy Brummer, IGH Partners LLC., 1200 25th Avenue South, St. Cloud, Minnesota, replied there are retaining walls and landscaping. There is a pipeline easement along the eastern boundary that they do not want to touch.

Planning Commission Recommendation

Motion by Commissioner Clancy, second by Commissioner Weber, to approve the final PUD development plan for the Robert Curve 4th Addition, subject to the three conditions noted.

Motion carried (7/0). This item will be before the City Council on May 22, 2023.

5. OTHER BUSINESS

The deadline for applications for the Planning Commission's vacant positions are on May 1st, 2023.

6. COMMISSION AND STAFF COMMENTS

None.

7. ADJOURN

Motion by Commissioner Weber to adjourn the Planning Commission Meeting at 7:46 p.m.

Respectfully submitted, Sheri Yourczek, Recording Secretary

DRAFT



Planning Commission Report

MEETING DATE:	May 2, 2023
CASE NO:	23-15V
APPLICANT:	Michael & Kathleen Goehring
PROPERTY OWNER:	Michael & Kathleen Goehring, and Colleen Goehring
REQUEST:	Variance from lot size and lot frontage
LOCATION:	11331 & 11335 Albavar Path
COMPREHENSIVE PLAN:	RDR, Rural Density Residential
ZONING:	A, Agricultural District
STAFF CONTACT:	Allan Hunting, 651.450.2554

ACTION REQUESTED

The specific requests for the project include the following:

1. A Variance to allow Parcel 1 to be 4.79 acres in size, whereas 5.0 acres is the minimum required.
2. A Variance to allow Parcel 2 to have a lot width at building setback line of 35 feet, whereas 200 feet is required.

BACKGROUND

The applicant is proposing to create a more permanent connection to Albavar Path for Parcel 2 so the existing driveway is located on a land strip to be created, then added to Parcel 2 so it has direct road frontage. See attached Lot Line Adjustment survey for parcel references.

The two parcels are owned by members of the same family. The applicants have supplied a survey drawing from 1991 that showed a driveway easement over Parcel 1 to be used as the driveway access for Parcel 2. The driveway easement apparently was never recorded. The owners are now proposing to make a permanent land connection to the road for Parcel 2.

In order to accomplish this, the owners are proposing to create a 35 foot wide parcel that would be removed from Parcel 1 and added to Parcel 2. This narrow width to a public street is sometimes known as a "flag stem" or "pipe stem" lot. Both parcels are zoned A, Agriculture which requires a minimum lot size of 5.0 acres and minimum lot width at building setback line (30 feet) of 200 feet. The minimum lot frontage for any lot at road frontage must be at least 30 feet. Parcel 1 is currently 5.2 acres in size. The 35 foot wide strip would be 0.41 acres in size. Once removed from Parcel 1, its lot size would drop to 4.79 acres. Parcel 2 is currently over 10 acres in size. Two Variances are needed for this land swap to occur, one for lot size and one for lot width at setback line.

EVALUATION OF REQUEST

VARIANCE

City Code Title 10, Chapter 3. Variances, states that the City Council may grant variances when they are in harmony with the general purposes and intent of the zoning ordinance and consistent with the comprehensive plan and establishes that there are practical difficulties in complying with the official control. In order to grant the requested variance, City Code identifies criteria which are to be considered practical difficulties. The applicant's request is reviewed below against those criteria.

1. The variance request is in harmony with the general purpose and intent of the city code and consistent with the comprehensive plan.

Both lots are developed with houses. The house on Parcel 1 is to the far west side of the lot. Reducing the size of the lot for the driveway would not have an impact on the parcel as developed. Parcel 1 would still have a lot width of 299 feet, which exceeds minimum standards. Parcel 2 is 10 acres in size and adding the flag portion would bring this lot into conformity with other lots that have direct frontage on a public street.

2. The property owner proposes to use the property in a reasonable manner not permitted by the zoning ordinance.

Again, creating the flag stem for Parcel 2 provides direct lot frontage for the lot so the use would be like other lots providing reasonable use of the property.

3. The plight of the landowner is due to circumstances unique to the property not created by the landowner.

Creating the flag stem for Parcel 2 does impact Parcel 1 which puts it at less than 5.0 acres, thus needing a variance. Adding the land to Parcel 2 for the driveway could be looked at as a better solution rather than creating a driveway easement over Parcel 1 so there is full ownership and would remove an encumbrance from Parcel 1.

4. The Variance will not alter the essential character of the locality.

The driveway already exists so creating the flag stem would not alter the character of the neighborhood as this has no impact on the physical appearance of the two parcels. Reducing the size of Parcel 1 does not appear to have an impact on the neighborhood as this lot is already developed and because the house is on the opposite side of the lot, any possible improvements would not be impacted by the 35 foot wide reduction in width of the lot.

5. Economic considerations alone do not constitute an undue hardship.

Economic considerations do not appear to be a factor in this request.

ALTERNATIVES

The Planning Commission has the following actions available on the following requests:

A. Approval: If the Planning Commission finds the application to be acceptable, the following action should be taken:

- A Variance from Chapter 10-7-2.A to allow a parcel 4.79 acres in size whereas 5.0 acres in minimum subject to the following conditions:

1. An Administrative Subdivision approval shall be required to modify the lot boundary. The applicant is responsible for making application for such Administrative Subdivision prior to any survey being submitted to Dakota County.

2. The Variance shall become void two (2) years after it was granted unless made use of within two (2) years or such longer period as the council, within two years, may provide. This is described in Chapter 10-3-4.F of the City Code.

Practical Difficulty: Reducing the size of Parcel 1 does not appear to have an impact on the neighborhood as this lot is already developed and because the house is on the opposite side of the lot, any possible improvements would not be impacted by the 35 foot wide reduction in width of the lot.

- A Variance from Chapter 10-7-2.A to allow a parcel with less than 200 feet of lot width at setback line subject to the following conditions:

1. An Administrative Subdivision approval shall be required to modify the lot boundary. The applicant is responsible for making application for such Administrative Subdivision prior to any survey being submitted to Dakota County.

2. Parcel 3 shall be required to be combined with Parcel 2 when recording the document with the County. This will be a condition of Administrative Subdivision approval.

3. The Variance shall become void two (2) years after it was granted unless made use of within two (2) years or such longer period as the council, within two years, may provide. This is described in Chapter 10-3-4.F of the City Code.

Practical Difficulty: creating the flag stem for Parcel 2 provides direct lot frontage for the lot so the use would be like other lots providing reasonable use of the property.

B. Denial: Should the proposed request, or portions thereof, be found not acceptable, the appropriate requests described above should be denied. The basis for denial must be stated in any such motion.

RECOMMENDATION

Staff believes there is a rationale for approving both Variances with the practical difficulties listed above. Staff recommends approval of the Variances as presented.

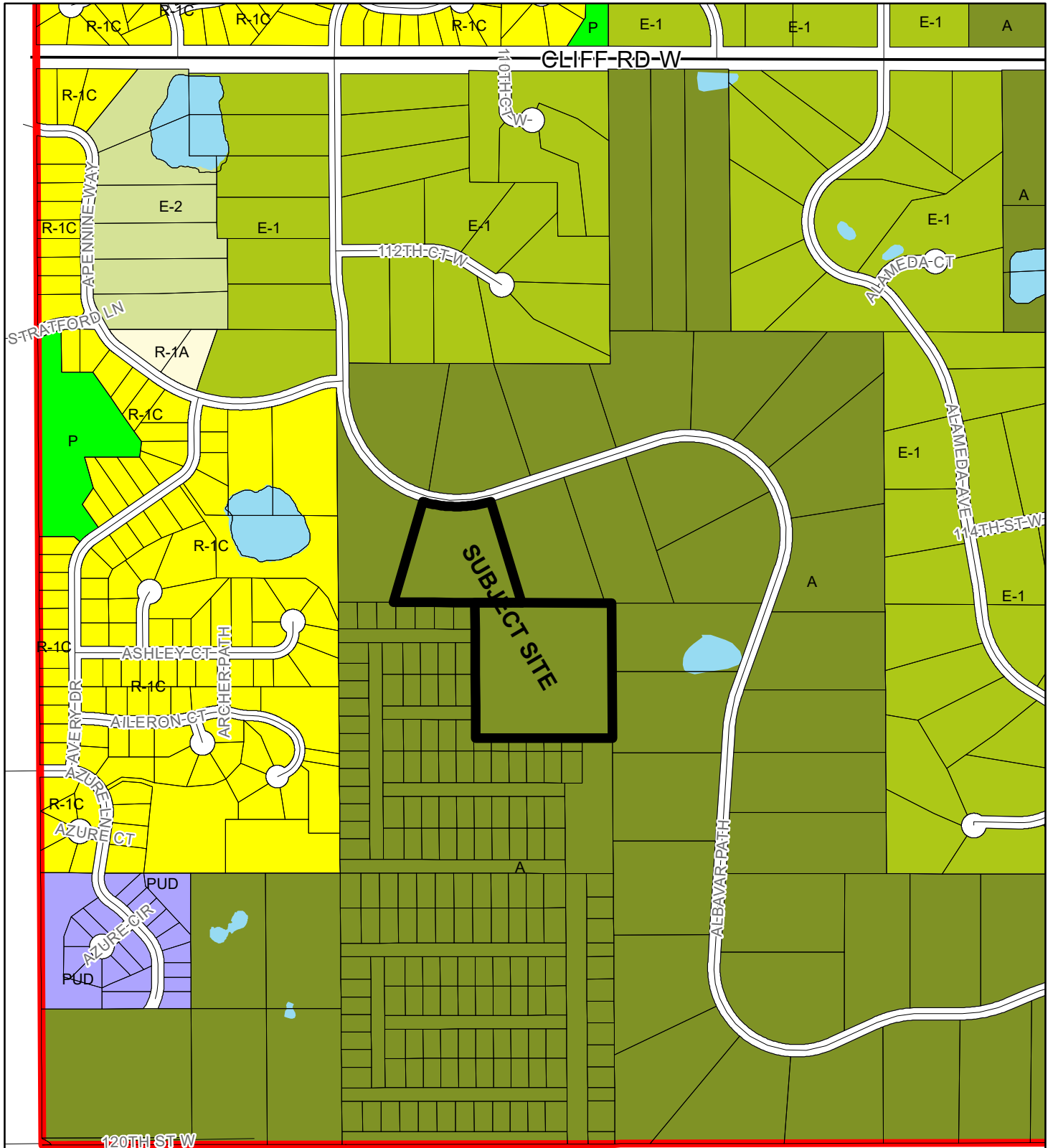
ATTACHMENTS

1. Location Map
2. Narrative
3. Lot Line Adjustment Survey
4. 1992 Survey showing proposed Driveway Easement



Location Map

Case No. 23-15V



DESCRIPTION OF REQUEST

The property at 11335 Albavar Path is currently accessed by an easement from 11331 Albavar Path.

This request is for a variance to transfer ownership of the easement property (Michael P Goehring and Kathleen A Goehring) to the owner of 11335 Albavar Path (Colleen V Goehring). Approval of this request will consolidate the entire driveway of 11335 property to that parcel.

The recently performed survey indicates that approval of this variance request will result:

Lot 9 (11331 Albavar Path)

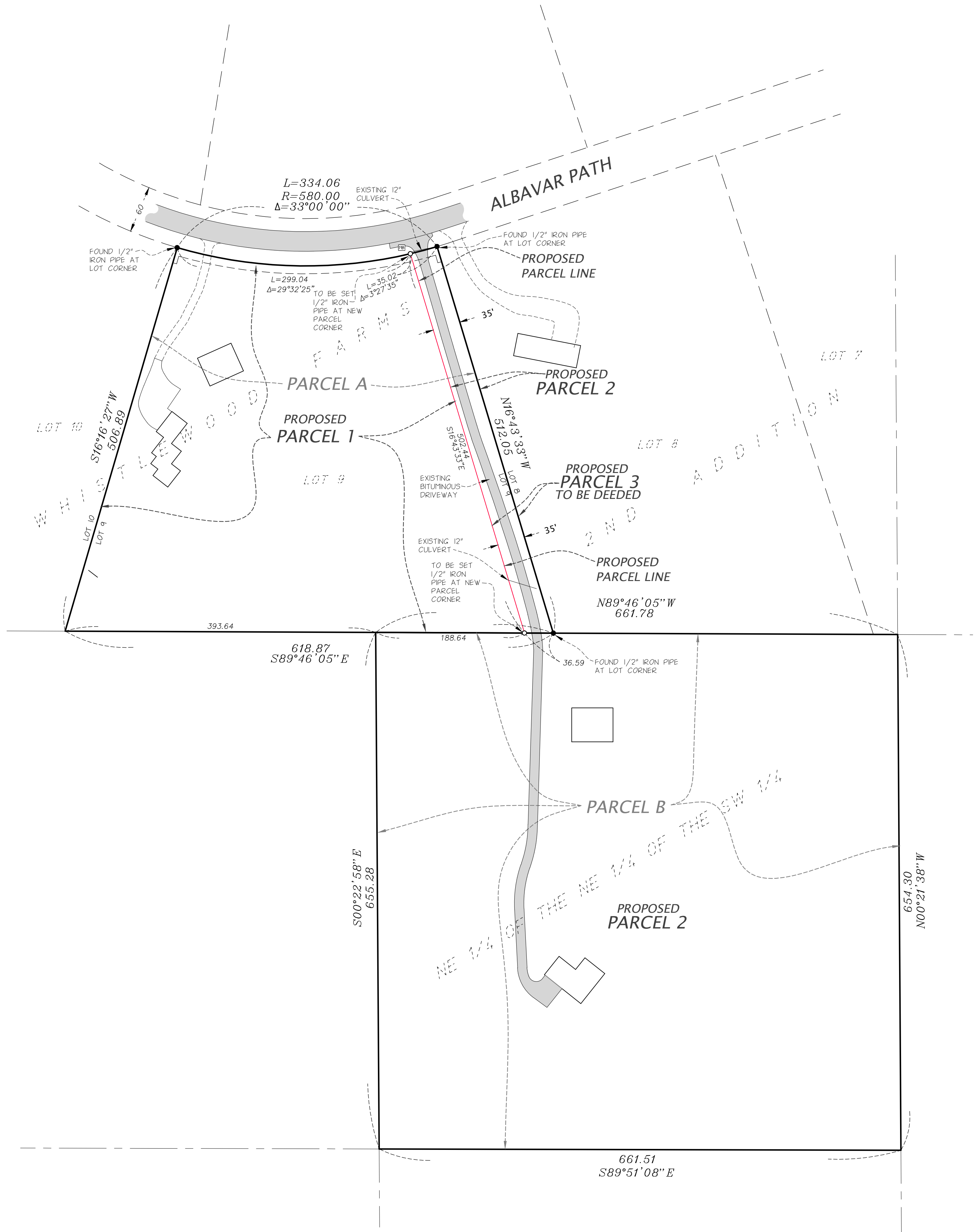
Existing: 5.196 acres

Proposed: 9.945 acres

Parcel 2 (11335 Albavar Path)

Existing: 9.945 acres

Proposed: 10.29 acres



EXISTING LEGAL DESCRIPTIONS:

PARCEL A (AS SHOWN ON AVAILABLE TAX RECORDS)
MICHAEL & KATHLEEN GOEHRING
11331 ALBAVAR PATH

Lot 9, Block 2, WHISTLEWOOD FARMS 2ND ADDITION, Dakota County, Minnesota.

PARCEL B (CERTIFICATE OF TITLE #185150
COLLEEN GOEHRING
11335 ALBAVAR PATH

The Northeast Quarter of the Northeast Quarter of the Southwest Quarter of Section 31, Township 31, Range 22, according to the Government Survey thereof.

EXISTING AREAS:

PARCEL A = 226,350 SQ.FT. / 5.196 ACRES
PARCEL B = 433,217 SQ.FT. / 9.945 ACRES

TOTAL = 15.142 ACRES

PROPOSED LEGAL DESCRIPTIONS:

PARCEL 1
MICHAEL & KATHLEEN GOEHRING PARCEL AFTER DEEDING PARCEL 3 TO COLLEEN GOEHRING - 11331 ALBAVAR PATH

Lot 9, Block 2, WHISTLEWOOD FARMS 2ND ADDITION, Dakota County, Minnesota, EXCEPT the easterly 35.00 feet thereof.

PARCEL 2
COLLEEN GOEHRING PARCEL AFTER ACQUIRING PARCEL 3 FROM MICHAEL & KATHLEEN GOEHRING - 11335 ALBAVAR PATH

The Northeast Quarter of the Northeast Quarter of the Southwest Quarter of Section 31, Township 31, Range 22, according to the Government Survey thereof

and

The easterly 35.00 feet of Lot 9, Block 2, WHISTLEWOOD FARMS 2ND ADDITION, Dakota County, Minnesota.

PARCEL 3
35' STRIP OF LAND FROM MICHAEL & KATHLEEN GOEHRING TO COLLEEN GOEHRING

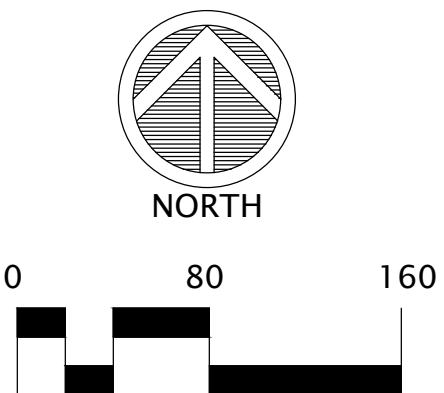
The easterly 35.00 feet of Lot 9, Block 2, WHISTLEWOOD FARMS 2ND ADDITION, Dakota County, Minnesota.

PROPOSED AREAS:

PARCEL 1 = 208,602 SQ.FT. / 4.79 ACRES
PARCEL 2 = 450,991 SQ.FT. / 10.35 ACRES
PARCEL 3 = 17,774 SQ.FT. / 0.41 ACRES (TO BE DEEDED)

SURVEY NOTES:

1. BEARINGS ARE BASED ON THE DAKOTA COUNTY COORDINATE SYSTEM NAD 1983. BEARINGS ARE DIFFERENT THAN SHOWN ON THE RECORDED PLAT. ALL INTERIOR ANGLES MATCH THE RECORDED PLAT ANGLES.
2. UNDERGROUND UTILITIES NOT SHOWN.
3. CONTOURS SHOWN PER LIDAR DATA OBTAINED FROM THE DNR MNTPO WEBSITE. NOT FIELD VERIFIED.
4. ELEVATION ARE BASED ON GPS DERIVED VALUES FOR NAVD 88.
5. BUILDINGS AND DRIVEWAYS SHOWN PER AIR PHOTO. NOT FIELD VERIFIED.
6. AS DIRECTED BY THE CLIENT. THE PURPOSE OF THIS SURVEY WAS TO LOCATE THE DRIVEWAY AND THE LOT CORNERS COMMON TO LOTS 8 AND 9 AND SET THE NEW CORNERS FOR PARCEL 3.



LOT LINE ADJUSTMENT

CONTACT:

Colleen Goehring
11335 Albavar Path
651-552-0346
cogoehring@outlook.com0

COUNTY/CITY:

DAKOTA COUNTY

CITY OF INVER GROVE HEIGHTS

REVISIONS:

DATE	REVISION
4-20-23	ISSUED
4-26-23	REVISED PARCEL LINE

CERTIFICATION:

I hereby certify that this plan was prepared by me, or under my direct supervision, and that I am a duly licensed Land Surveyor under the laws of the state of Minnesota.

Daniel L. Thurmes
Daniel L. Thurmes Registration Number: 25718
Date: 4-20-23

PROJECT LOCATION:

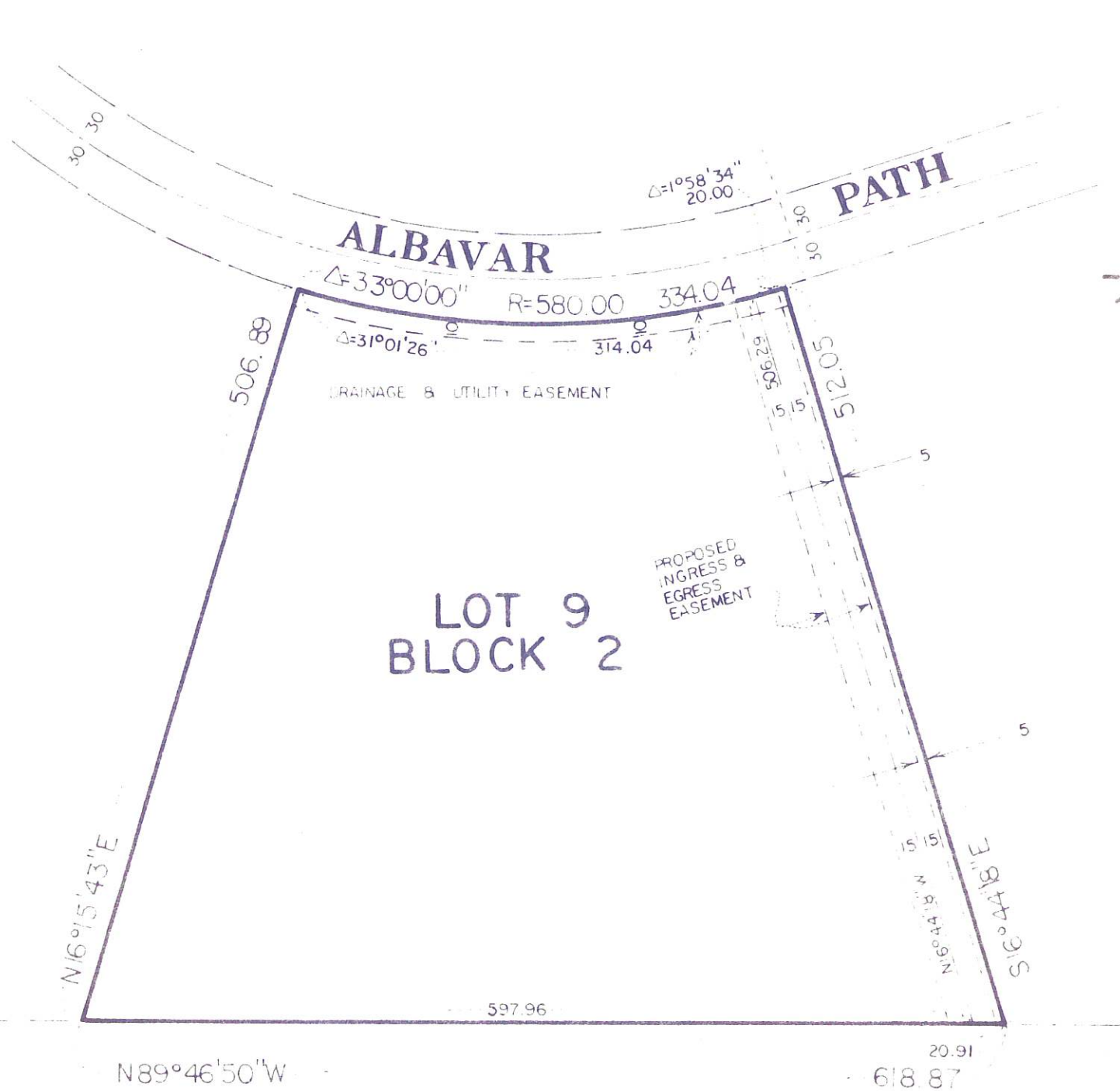
11335 ALBAVAR PATH
PID#20-03100-56-921
11331 ALBAVAR PATH
PID#20-84001-02-090

Suite #200
1970 Northwestern Ave.
Stillwater, MN 55082
Phone 651.275.8969
dan@cssurvey.net

CORNERSTONE LAND SURVEYING, INC.

FILE NAME SURVLEN09A
PROJECT NO. LEN2209A

LOT LINE ADJUSTMENT



A 30.00 foot easement for ingress and egress, over, under and across Lot 9, Block 2, WHISTLEWOOD FARMS 2ND ADDITION, Dakota County, Minnesota, being 15.00 feet on each side of the following described center line: Commencing at the southeast corner of said Lot 9; thence $N89^{\circ}46'50''W$, bearing assumed, along the south line of said Lot 9, a distance of 20.91 feet to its intersection with a line 20.00 feet westerly of, as measured at right angles to, and parallel with the east line of said Lot 9 and the point of beginning of the center line to be described; thence $N16^{\circ}44'18''W$, along said parallel line, a distance of 506.29 feet to the north line of said Lot 9 and there terminating. The side lines of said easement are to be lengthened or shortened to terminate on the south line of said Lot 9 and on the north line of said Lot 9.

MISC3:D701 DDXXIV

DWYER & ASSOCIATES, INC.

Land Surveyors

875 Spiral Boulevard

Hastings, Minnesota 55033

Bus. (612) 437-2909

Res. (612) 435-5417



DESCRIPTION SKETCH

SCALE: 1" = 100'

APPROVED BY:

DRAWN BY DLT

DATE: 4-8-91

REVISED

WARREN GOEHRING

DAKOTA CO., MN

DRAWING NUMBER

91-023

I hereby certify that this survey plan or report was prepared by me or under my direct supervision and that I am a duly Registered Land Surveyor under the laws of the State of Minnesota.

John I. Dwyer
4/9/91 Reg. No. 9294



Planning Commission Report

MEETING DATE:	May 2, 2023
CASE NO:	23-16V
APPLICANT:	Bruce Lenzen Design Build
PROPERTY OWNER:	John Gornick
REQUEST:	Variance to exceed the maximum size of an accessory building on a residential property.
LOCATION:	11880 Albavar Path
COMPREHENSIVE PLAN:	RDR, Rural Density Residential
ZONING:	A, Agricultural
STAFF CONTACT:	Heather Botten, 651.450.2569

ACTION REQUESTED

The applicant is requesting the following:

- A **Variance** from City Code sections 10-7-2.B and 10-15-18 to allow an accessory structure of 2,598 gross square feet in size, whereas 2,400 square feet is the maximum size allowed.

BACKGROUND

The property is 5.39 acres in size. The owner is currently building a single-family home with an attached three-car garage.

The applicant is requesting a Variance to construct a detached accessory structure 2,598 gross square feet in size. Rural residential property, greater than five acres in size, is allowed a maximum of two detached accessory buildings up to 2,400 gross square feet total.

The owner has stated that the proposed structure is needed to store his own personal items. The accessory building would be in compliance with other Zoning Code requirements such as setbacks and impervious surface standards.

EVALUATION OF REQUEST

The following Land Uses, Zoning Districts, and Comprehensive Plan designations surround the property:

Single family residential; Zoned A, Agricultural; Guided RDR, Rural Density Residential

Engineering. Engineering has reviewed the request and takes no exception to the Variance.

VARIANCE REVIEW

City Code Title 10, Chapter 3. Variances, states that the City Council may grant Variances when they are in harmony with the general purposes and intent of the Zoning Ordinance and consistent with the Comprehensive Plan and establishes that there are practical difficulties in complying with the official control. In order to grant the requested variance, City Code identifies criteria which are to be considered practical difficulties. The applicant's request is reviewed below against those criteria.

1. The Variance request is in harmony with the general purpose and intent of the City Code and consistent with the Comprehensive Plan.

The City recognizes that within large lot rural residential portions of the City, larger accessory structures can be appropriate. The regulations on gross square footage and total number of accessory buildings were designed to limit the massing of structures in the rural areas of the City. The City Council has reviewed and modified the allowed size and number of accessory structures over the years, most recently in 2021, increasing the size allowance on lots 3.4 acres – 5 acres in size. Staff does not believe the Variance to allow additional square footage to be consistent with, or in harmony with the Zoning Ordinance.

2. The property owner proposes to use the property in a reasonable manner not permitted by the Zoning Ordinance.

The proposed structure would be located about 100 feet from the closest property line to the north, exceeding setback requirements. There will be a three-car, attached garage to the house. Staff believes the proposed size of the accessory structure to be contrary to the intent of the Zoning Ordinance and may set a precedent for other large accessory buildings on lots greater than five acres.

3. The plight of the landowner is due to circumstances unique to the property not created by the landowner.

The property is 5.39 acres in size. Based on lot size and zoning the property is allowed two detached accessory buildings up to 2,400 gross square feet in size. The request for additional square footage may be considered a convenience to the applicant, not a practical difficulty.

In 2021, when the accessory structure size was amended for lots less than five acres, the ratio used was determined by the maximum accessory structure size allowed in the city, 2,400 gross square feet. The maximum 2,400 square feet size was divided by 5 acres which equaled 480 square feet of accessory structure space per acre ($2,400 / 5 = 480$). Utilizing this ratio for an accessory structure size on the proposed lot, the property would be allowed 2,587 square feet for an accessory structure.

4. The Variance will not alter the essential character of the locality.

The properties surrounding the lot are generally around five acres in size. Due to the size of the lots, existing vegetation, and location and size of neighboring structures, the proposed structure does not necessarily appear to alter the character of the neighborhood.

5. Economic considerations alone do not constitute an undue hardship.

Economic considerations do not appear to be a basis or a sole basis for the request.

ALTERNATIVES

A. Approval: If the Planning Commission finds the requests to be acceptable, the Commission should recommend approval of the request(s) with at least the following conditions:

- Approval of a **Variance** to allow an accessory structure 2,598 square feet in size, whereas 2,400 gross square feet is the maximum size allowed on the property subject to the following conditions:
 1. The site shall be developed in substantial conformance with the site plan on file with the Planning Department.
 2. The accessory structure shall not be used for commercial uses, storage related to a commercial use, or home occupations.
 3. A grading/erosion control plan shall be required at the time of the building permit application.
 4. A Variance shall become void two (2) years after it was granted unless made use of within two (2) years. The City Council may grant a single one (1) year extension, the request for which must be submitted to the city planning division at least sixty (60) days prior to the date upon which the Variance would become void.

Practical difficulty: To be stated

B. Denial. If the Planning Commission does not favor the proposed request(s), it should be recommended for denial, which could be based on the following rationale:

1. Denying the variance request does not preclude the applicant from reasonable use of the property.
2. Approval of the variance could set a precedent for other accessory building size variances on large lot residential property.
3. The facts presented did not satisfy the criteria needed to show a practical difficulty on the lot to support granting a variance. The lot is over 5 acres in size, there will be an attached garage, and the lot allows for a 2,400 square foot detached accessory structure.

RECOMMENDATION

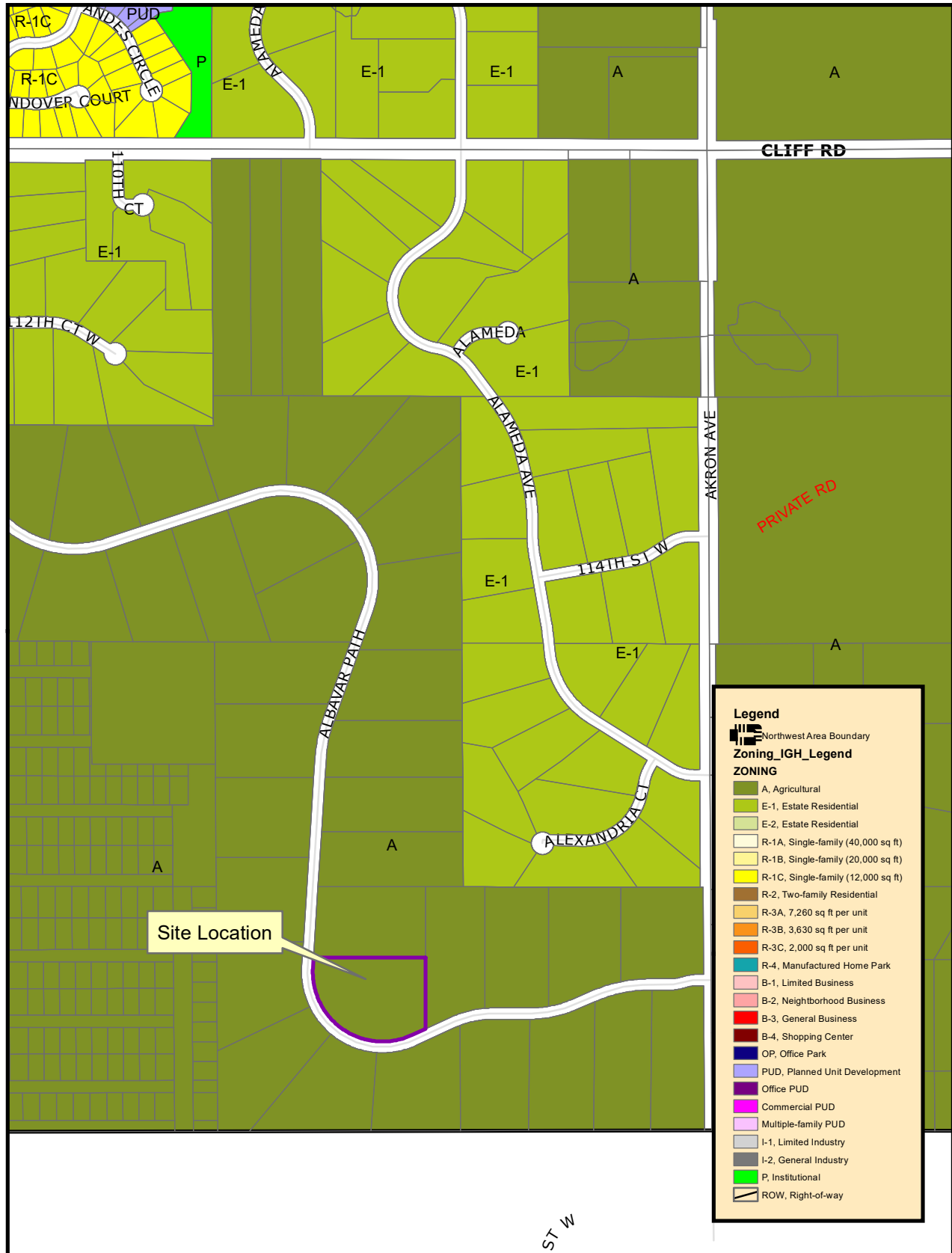
Based on the information in the preceding report and the reasons listed in Alternative B, staff does not believe there is sufficient rationale to support the Variance criteria and therefore recommends denial of the Variance request as proposed.

ATTACHMENTS

1. Zoning and Location Map
2. Narrative
3. Survey
4. Floor Plan
5. Elevation



11880 Albavar Path Case No. 23-16V



THIS DRAWING IS NEITHER A LEGALLY RECORDED MAP NOR A SURVEY AND IS NOT INTENDED TO BE USED AS ONE. THIS DRAWING IS A COMPILED RECORDS, INFORMATION AND DATA LOCATED IN VARIOUS CITY, COUNTY AND STATE OFFICES AND OTHER SOURCES AND IS TO BE USED FOR REFERENCE PURPOSES ONLY. THE CITY OF INVER GROVE HEIGHTS IS NOT RESPONSIBLE FOR ANY INACCURACIES HEREIN CONTAINED

Map produced by the City of Inver Grove Heights GIS Dept.
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Exhibit A
Zoning and Location Map

Map not to scale

Bruce Lenzen Design Build LLC
106 Buckeye ST. # 202
Hudson, WI 54016

4-19-2023

City of Inver Grove Heights

Variance Request: John and Linda Gornick
11880 Albavar Path, Inver Grove Heights, Minnesota

RE: 10-7-2: BULK STANDARDS: REF: 10-7-2: B Accessory Standards:
Lot size 3.4 Acres- 5 acres. Lot size (in acres) multiplied (X) by 480= maximum square feet.

Dear Planning & Zoning Members,

We are requesting a variance for the above address to seek relief of the maximum square footage for an accessory building.

Per the above referenced accessory building standards, the owners desire to have a structure that increases the allowable 2400 Sq/ft of an accessory structure, to a structure that is 2589 sq/ft in size. The additional square footage is an increase of 189 square feet in total.

The square foot formula being used is the above referenced standard.

Lot size: 5.39 acres X 480 = 2587 maximum gross square feet. The additional 2 square feet additional is to allow for standard building dimensions of 2' increments to be used.

The building will be used by the owner as a shop for development of personal projects. The requested increased size of the building appears to be within the size of other existing accessory buildings in the neighborhood.

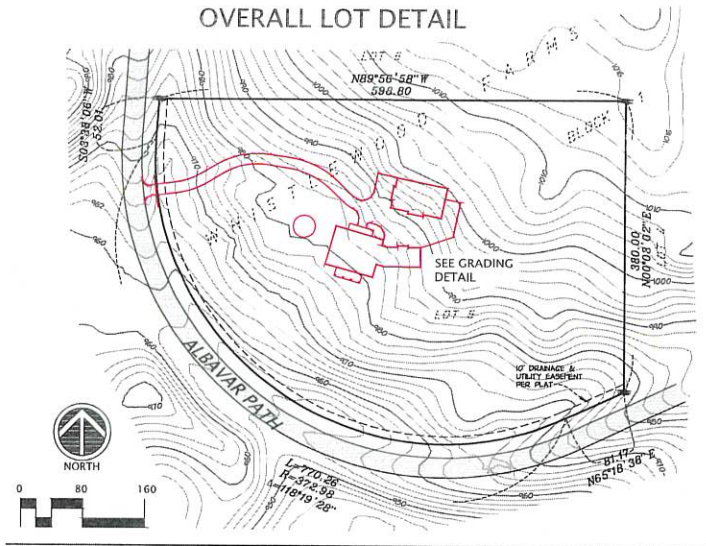
1. Due to the size of the lot (5.39 acres), the request for an additional 189 sq/ft will not overpower the lot and the building is designed to match the character of the house currently being constructed.
2. Granting the variance will not be materially detrimental to the public welfare or injurious to the property or improvements in the zoning district in which the subject property is located.
3. The granting of the variance would have no effect on any adjoining properties. This zoning relief requested will not cause any detriment to the common good, as the literal interpretation and strict application of the applicable zoning requirements of this chapter would cause substantial undue and unnecessary hardship to the current property owner not just a casual/discretionary inconvenience to the property owner.

Thank you for your consideration,
Sincerely,

Bruce Lenzen

Bruce Lenzen Design Build LLC.

OVERALL LOT DETAIL



SEPTIC

SEPTIC AREA BY OTHERS

PROPOSED BUILDING ELEVATIONS:

UNDATED PLANS
BRUCE LENZEN
ARCHITECTURE

FIRST FLOOR - 989.5
TOP OF FOUNDATION HOUSE - 988.7 (1'0\"/>

THE ABOVE ELEVATIONS WERE DETERMINED BY THE ARCHITECT.

1023.9 x 92.5
PROPOSED ELEVATION
PROPOSED CONTOUR
PROPOSED DRAINAGE
DENOTES EXISTING ELEV.
DENOTES SILT FENCE
EXISTING CONTOURS

PROPOSED IMPROVEMENT AREAS:

HOUSE - 4730 (IN SQUARE FEET)
FRONT ENT. - 261
DECK - 411
DRIVEWAY - 10,127
FIRE PIT - 660
WALLS - 200
ACCESSORY BLDG. - 2726
TOTAL IMPROVEMENTS - 19,115 SQ.FT.
8.2 % (X OF LOT AREA)
AREA OF DISTURBANCE - 48,154 SQ.FT. / 1.11 ACRES

GORNICK RESIDENCE

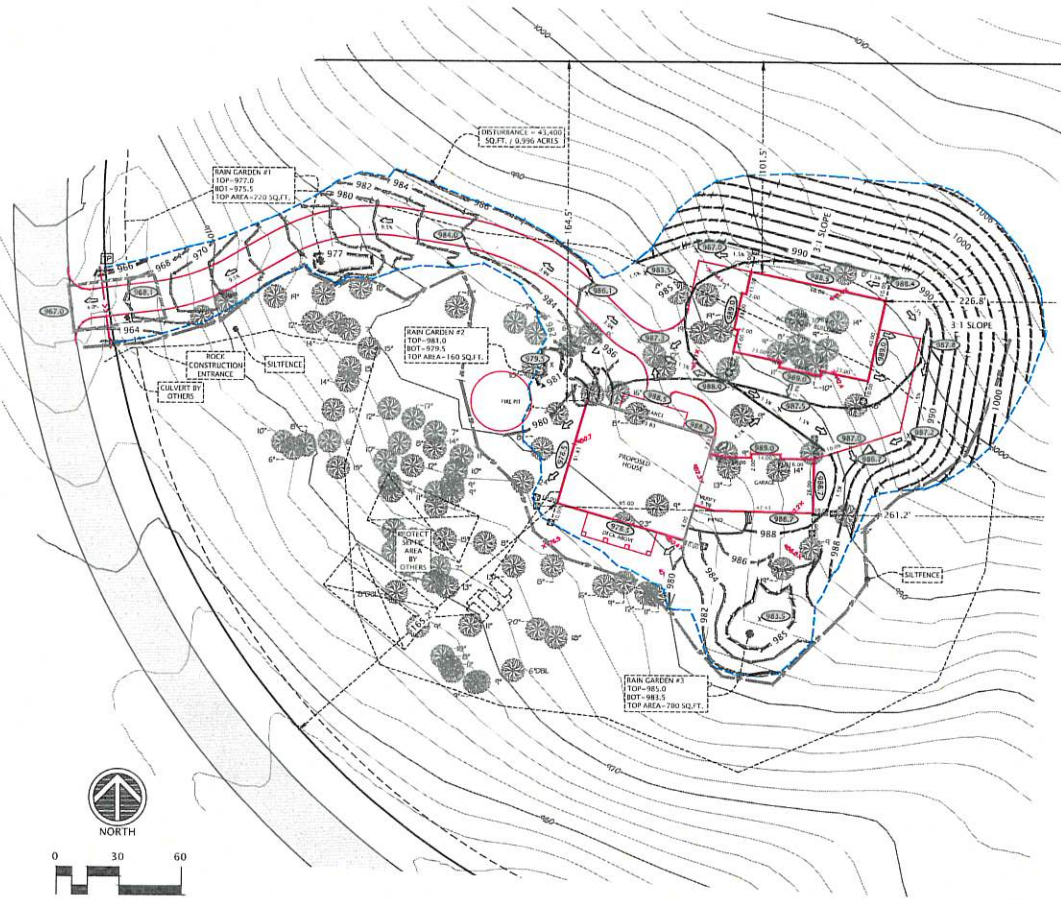
CONTACT:

BRUCE LENZEN
Bruce Lenzen Design / Build
651-329-4060

COUNTY/CITY:

DAKOTA COUNTY
CITY OF INVER GROVE HEIGHTS

GRADING DETAIL



REVISIONS:

DATE	REVISION
6-15-22	PRELIMINARY ISSUE
9-20-22	PRELIMINARY ISSUE
9-26-22	ISSUED
10-12-22	ADD RAIN GARDENS
11-15-22	CONSTRUCTION LIMITS
12-13-22	3:1 SLOPES

CERTIFICATION:

I hereby certify that this plan was prepared by me, or under my direct supervision, and that I am a duly licensed Land Surveyor under the laws of the State of Minnesota.

Dr. M. L. Hornum Registration # 25378
Date: 8-15-22

PROJECT LOCATION:

11880
ALBAVAR PATH
PID#20-8400-01-050

Suite #200
1970 Northwestern Ave.
Stillwater, MN 55082
Phone 651.275.8969
dam@csurvey.net

CORNERSTONE LAND SURVEYING, INC.

FILE NAME: SURVEY09
PROJECT NO.: LENZ209

CERTIFICATE OF SURVEY

LEGAL DESCRIPTION:

(AS SHOWN ON AVAILABLE TAX RECORDS)

Lot 5, Block 1, WHISTLEWOOD FARMS, Dakota County, Minnesota.

EASEMENTS/ENCUMBRANCES:

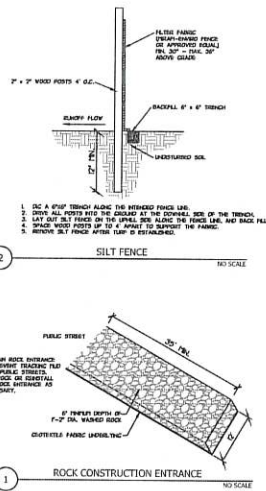
NO TITLE COMMITMENT OR TITLE OPINION WAS PROVIDED TO US THAT WOULD SHOW EASEMENTS OF RECORD. EASEMENTS MAY EXIST THAT ARE NOT SHOWN.

AREA:

TOTAL AREA AS SHOWN - 234,669 SQ.FT. / 5.39 ACRES

SURVEY NOTES:

1. BEARINGS ARE BASED ON THE DAKOTA COUNTY COORDINATE SYSTEM NAD 1983. BEARINGS ARE DIFFERENT THAN SHOWN ON THE RECORDED PLAT. ALL INTERIOR ANGLES MATCH THE RECORDED PLAT ANGLES.
2. UNDERGROUND UTILITIES NOT SHOWN.
3. CONTOURS SHOWN PER LIDAR DATA OBTAINED FROM THE DNR MINTOPO WEBSITE. NOT FIELD VERIFIED.
4. ELEVATION ARE BASED ON GPS DERIVED VALUES FOR NAVD 88.

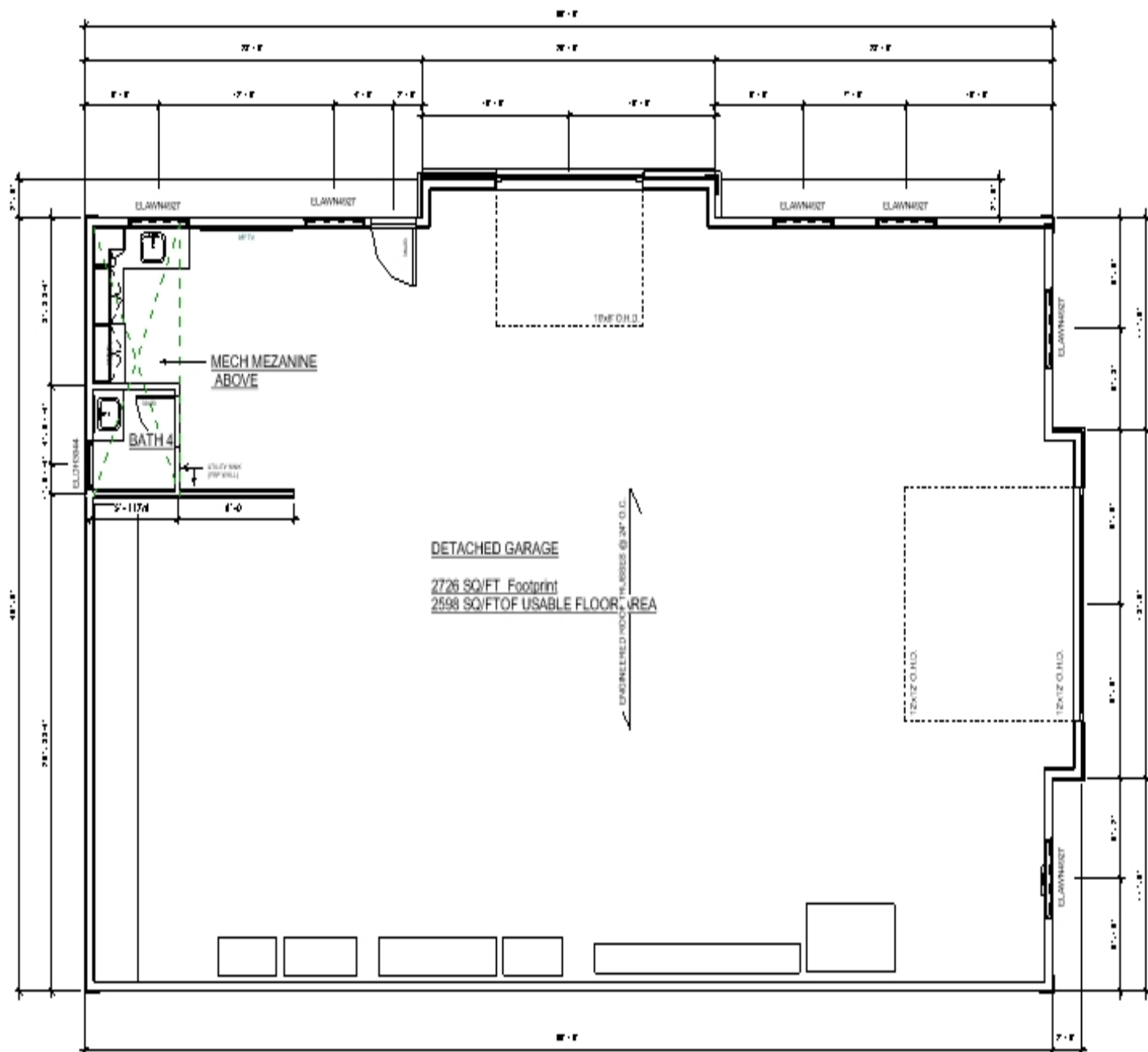


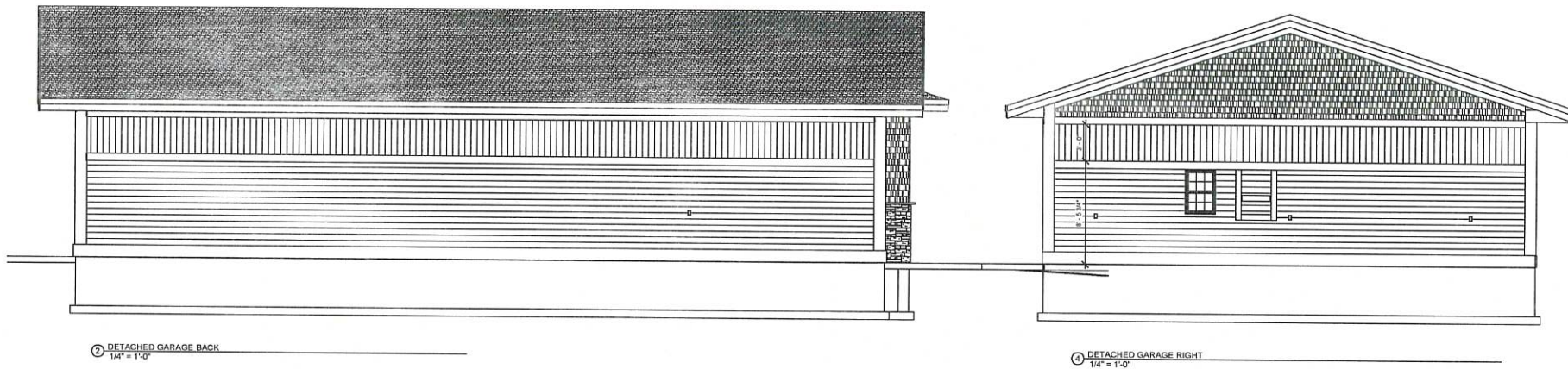
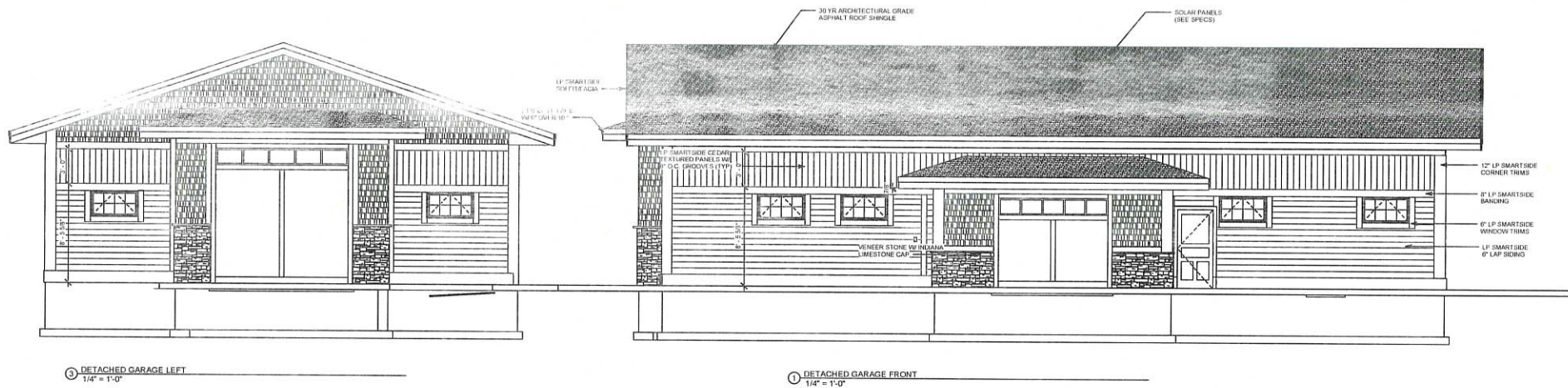
1. ROCK CONSTRUCTION ENTRANCE
NO SCALE

CALL BEFORE YOU DIG
Gopher State One Call
MIN CITY AREA: 811-484-8802
TOLL FREE: 1-800-252-1166

LEGEND

FOUND CAST IRON MONUMENT
FOUND MONUMENT (AS NOTED)
SILT FENCE MARKED WITH MIN LICENSE NO. 25378
CABLE TV PEDESTAL
ELECTRIC METER
ELECTRIC TRANSFORMER
GUY WIRE
POWER POLE
GAS METER
TELEPHONE PEDESTAL
SANITARY CLEANOUT
WATER WELL
MAIL BOX
TREES
BUILDING LINE
BITUMINOUS SURFACE
CONCRETE SURFACE
UNDERGROUND TELEPHONE
OVERHEAD UTILITY
UNDERGROUND GAS
TRENCH





BRUCE LENZEN DESIGN BUILD, LLC.
106 BUCKEYE ST. # 202
HUDSON WI 54016
651 329 4060

No.	Description	Date

No.	Description	Date

GORNICK RESIDENCE
11880 ALBAVAR PATH
INVER GROVE HEIGHTS, MN

BUILD SET

DETACHED GARAGE ELEVATIONS
Date: 8-8-22
A203



Planning Commission Report

MEETING DATE:	May 2, 2023
CASE NO:	23-17ZPA
APPLICANT:	Eric Gunderson
PROPERTY OWNER:	Same as Applicant
REQUEST:	Comprehensive Plan Amendment & Rezoning
LOCATION:	South of 7011 Concord Blvd, Identified as PID No. 20-71161-00-016
COMPREHENSIVE PLAN:	MDR, Medium Density Residential
ZONING:	R-3C, Multiple-Family Residential
STAFF CONTACT:	Heather Botten, 651.450.2569

ACTION REQUESTED

The following specific applications are being requested:

- A Comprehensive Plan Amendment to change the land use from MDR, Medium Density Residential to LDR, Low Density Residential.
- A Rezoning of the property from R-3C, Multiple-family Residential to R-1C, Single-family Residential.

BACKGROUND

The applicant's property is 0.34 acres (15,012 square foot) in size. The property is currently vacant. It is the applicants desire to move a single-family home onto the lot. The property is located along the west side of Concord Boulevard, south of 70th Street. The proposed home would comply with setbacks and impervious surface requirements and would match neighboring single-family homes in style, age, and relative footprint. Access would be off the shared driveway to the south of the lot.

The current zoning of R-3C allows a multiple-family development on the parcel. The applicant has stated the lot is too small for a multi-family development to be financially feasible. Additionally, a multi-family building would more than likely require variances to comply with today's code requirements.

If the Comprehensive Plan Amendment and Rezoning are successful, a building permit would be required to relocate a home onto this parcel.

EVALUATION OF REQUEST

Surrounding Uses

The following land uses, zoning districts, and comprehensive plan designations surround the subject property:

North: Landscaping business; zoned B-2; guided NC, Neighborhood Commercial

East: ROW/Vacant land; zoned I-1, Limited Industrial; guided LI, Light Industrial

South: Single-family Residential; zoned R-3C; guided MDR

West: Single-family Residential; zoned R-1C; guided LDR

Comprehensive Plan Amendment

The property is currently guided MDR, Medium Density Residential. Medium Density Residential accommodates somewhat higher residential densities, ranging from 8 to 12 dwelling units per net acre. Uses in this classification include higher density townhome developments and apartments, all with full public utility service.

The applicant is requesting a change to Low Density Residential (LDR). The Low Density Residential category encompasses traditional “urban” density development in Inver Grove Heights. LDR includes lots or parcels ranging from 1 unit per acre to 4 units per net acre. Housing types in the Low Density Residential category include single-family detached homes, twin units and lower density, townhome style developments. In all cases, Low Density residential developments will be served by public water and sanitary sewer systems.

Rezoning

The City Code, Title 10-3-5 states that a Rezoning request must be in the best interest of the physical development of the City in order to be approved. This suggests that the request should be reviewed against such factors as infrastructure availability; compatibility with existing land uses in the neighborhood; and consistency with the Comprehensive Plan.

Infrastructure

City sewer and water are available to the site. No additional roadways or other public improvements appear to be necessary with this request.

Comp Plan Consistency

With the approval of the requested Comprehensive Plan Amendment, the Rezoning would be consistent with the 2040 Comprehensive Plan.

Neighborhood Compatibility

The property is an existing lot of record. There are other single-family units to the south and west of this parcel. The request does not appear to have any adverse impacts on the neighboring properties

Staff believes the proposed zoning would be compatible with the existing, established uses in the neighborhood.

ALTERNATIVES

The Planning Commission has the following alternatives available for the proposed request:

A. Approval: If the Planning Commission finds the application acceptable, the Commission should make the following recommendation(s):

- Approving the Comprehensive Plan Amendment to change the land use from MDR, Medium Density Residential to LDR, Low Density Residential subject to the following conditions:
 1. The Metropolitan Council shall not require any significant modifications to the Comprehensive Plan Amendment.
 2. The Metropolitan Council shall not make a finding that the Comprehensive Plan Amendment has a substantial impact or contain a substantial departure from any metropolitan systems plan.
- Approval of a **Rezoning** of the parcel from R-3C, Multiple-family Residential to R-1C, Single-family Residential

B. Denial: If the Planning Commission does not favor the request, a recommendation of denial should be forwarded to the City Council. With a recommendation of denial, findings or the basis for the denial should be given.

RECOMMENDATION

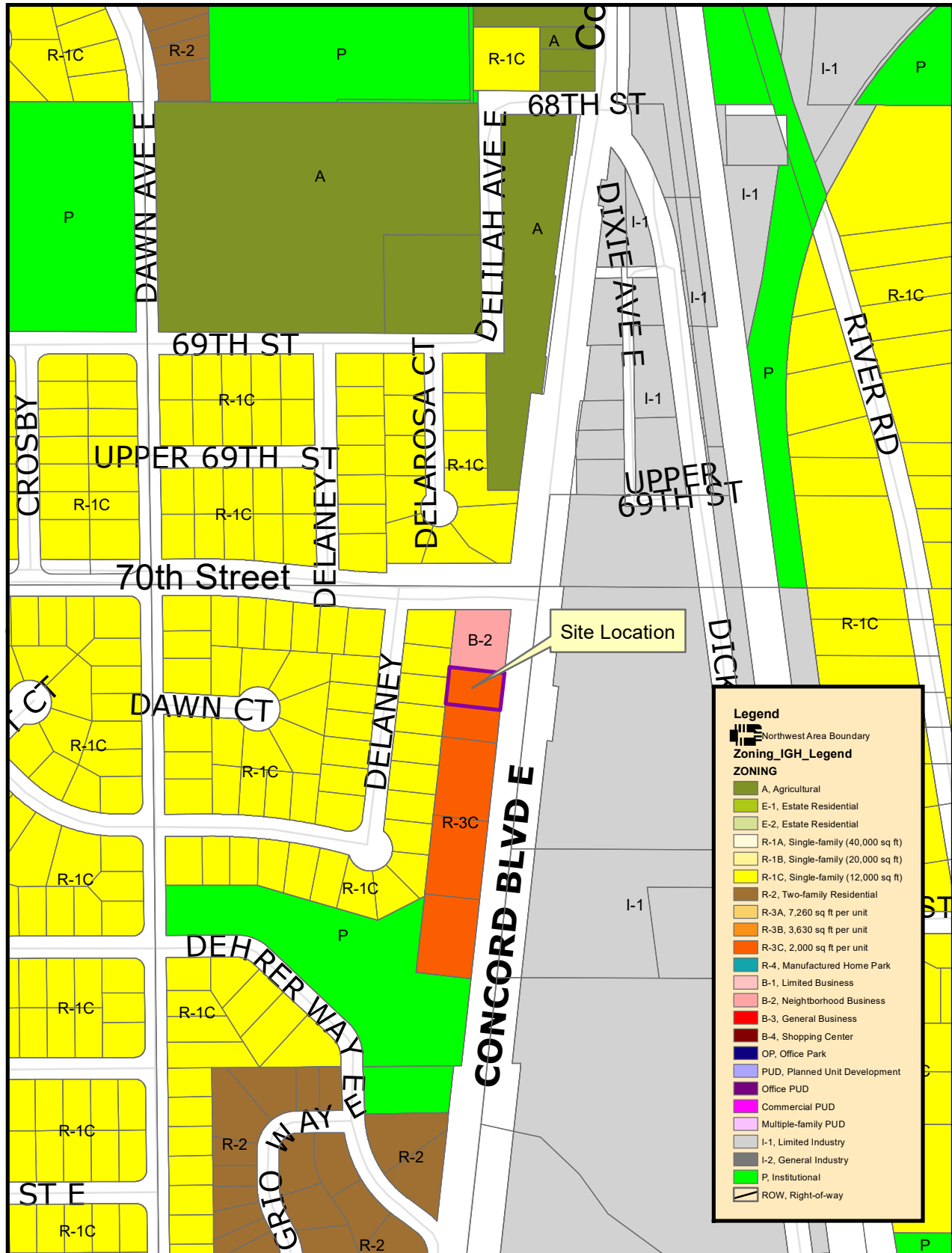
Based on the information in the preceding report and the conditions listed in Alternative A, staff is recommending approval of the request as presented.

ATTACHMENTS

1. Zoning and Location Map
2. Narrative
3. Site Plan
4. Photo of House



7025 Concord Blvd Case No. 23-17ZPA



THIS DRAWING IS NEITHER A LEGALLY RECORDED MAP NOR A SURVEY AND IS NOT INTENDED TO BE USED AS ONE. THIS DRAWING IS A COMPILED RECORD, INFORMATION AND DATA LOCATED IN VARIOUS CITY, COUNTY AND STATE OFFICES AND OTHER SOURCES AND IS TO BE USED FOR REFERENCE PURPOSES ONLY. THE CITY OF INVER GROVE HEIGHTS IS NOT RESPONSIBLE FOR ANY INACCURACIES HEREIN CONTAINED.

Map produced by the City of Inver Grove Heights GIS Dept.
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Exhibit A
Zoning and Location Map

Map not to scale

Eric Gunderson
797 Lexington Pkwy S
St Paul, MN 55116
651-226-1521 | eric@monarchmsp.com

Re: Re-zoning and Comprehensive Plan Amendment for 7025 Concord Blvd

To Staff at the City of Inver Grove Heights,

Hello, my name is Eric Gunderson. I'm the new owner of PID: 20-71161-00-016 roughly located at 7025 Concord Blvd. I am seeking a Rezoning and Comprehensive Plan Amendment of this property from its current designation of R-3C to R-1C in order to construct a single family home. Please see Exhibit A for location reference.

I am seeking these because:

- The current lot is too small for multi-family development to be financially feasible
- Access to the site is restricted to a one-way in one-way out frontage road; a less dense development would have less of a traffic impact on the neighbor directly adjacent to the site
- The proposed development will match neighboring single family homes in scale, style, age, and relative footprint
- The proposed development will save a structure from demolition while also adding housing to a vacant parcel that has never been developed in Inver Grove Heights

With the parcel's current zoning, I cannot construct a new foundation and move a single family house to this location. Because of this, and with the above mentioned points in mind, I am formally submitting my applications for Rezoning and a Comprehensive Plan Amendment for this parcel to R-1C.

In addition to this letter which serves as the narrative clearly describing my requests for rezoning and a comprehensive plan amendment, I have attached the following:

- A completed Planning Application Form
- An Abstractor's Certificate of properties within 350 feet of this property
- Map clearly showing the property to be rezoned (Exhibits B)
- An exact legal description of the property in Word format (Exhibit C)
- A site plan showing setbacks and the approximate location of the house (Exhibit D)
- A picture of the house to be moved from Rosemount to Inver Grove Heights (Exhibit E)

Thank you for your time and consideration.

Sincerely,

Eric Gunderson

This is an aerial map of a residential neighborhood in Minneapolis, MN. The map displays property boundaries, lot numbers, and street names. A central property is highlighted in yellow and labeled "Subject Property" with dimensions of 100' x 150'. Surrounding properties are labeled with numbers such as 7061, 7053, 7045, 7033, 7011, 7082, 7056, 7048, 7038, 7026, 7018, 7027, and 7011. Streets shown include Delaney Avenue, 70th Street East, Concord Boulevard, and Mississippi River Greenway. The map also shows a "Natureview Landscaping" area and a "Chippewa Trail" area.

Property Map



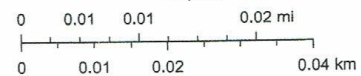
4/20/2023, 4:10:21 PM

Parcels

Dedicated Right of Way

Right of Way Easement

1:1,128



Esri Community Maps Contributors, County of Dakota, Metropolitan Council, MetroGIS, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson.

Copyright 2018, Dakota County
This drawing is neither a legally recorded map nor a survey and is not intended to be used as one.

Picture of House to be Moved from Rosemount to Inver Grove Heights





Planning Commission Report

MEETING DATE:	May 2, 2023
CASE NO:	22-37ZC
APPLICANT:	Bituminous Roadways, Inc.
PROPERTY OWNER:	Same as Applican
REQUEST:	Sand and Gravel Zoning District Designation Five (5) Year Renewal.
LOCATION:	112th Street and Rich Valley Boulevard
COMPREHENSIVE PLAN:	RDR, Rural Density Residential
ZONING:	A, Agricultural and Sand & Gravel Overlay District
STAFF CONTACT:	Allan Hunting, 651.450.2554

ACTION REQUESTED

The applicant has submitted a narrative describing the operation and has provided maps showing existing conditions and a final development plan for the gravel pit. The applicant is proposing one change to the current approvals which is to allow mining below the current lowest elevation. Bituminous Roadways are currently permitted to mine to an elevation of 840 feet above sea level. This is a mining depth of 60-90 feet based on the site based on ground elevation. The applicant is proposing to mine to a depth of 800 feet, which would allow Bituminous Roadways to increase the maximum mining depth by 40 feet and extract up to an additional 3.4 million cubic yards of sand and gravel material. The increase in the mining depth is estimated to add approximately 10 years to the life of the mine. The expected duration of mining is 30 years total. Actual life will depend upon market demand.

- The water-table aquifer beneath the site flows generally from west to east at an elevation between 800 to 745-feet.
- The same equipment currently in use at the mine will continue to be used for the expansion with no increase in equipment number, size, or type.
- The mining rate will remain the same for the expansion, including the frequency of truck trips to and from the operation.
- The proposed mine operating aerial footprint will not increase for the proposed expansion.
- The location and quantity of fuel, asphalt cement, and other chemical storage will not change from the current operation.
- Backfilling of the mine is expected to consist of excess sand from the operation and clean soil from off-site BRI construction projects.
- Per Minnesota Rules 4410.4300, subpart 12, the proposed expansion does not trigger a mandatory Environmental Assessment Worksheet (EAW).

History

The City granted the original Sand and Gravel zoning of the property on May 13, 1974, for a period of 15 years. On December, 26, 1979, the City approved a Conditional Use Permit for the asphalt plant. This permit was initially granted for a period of five-years but was extended by the City, at the owners request in 1984. On April 24, 1989, the City approved the next five-year extension and a CUP for the asphalt plant and for a contractors yard for the painting contractor that also operates out of the site. The City Council again approved an extension on March 28, 1994 for both the Sand and Gravel Overlay and for the CUP extension.

The City Council approved a five-year extension for the Sand and Gravel Overlay and CUP for sand and gravel processing, asphalt plant and contractor's yard in April 2001 at the existing 70 acre site.

In 2002, the City Council approved a 130 acre expansion of the sand and gravel operation. That expansion required that an EAW be prepared for the site. This was done and was reviewed by the Environmental Commission and was approved by the City Council with a negative declaration that an environmental impact statement was not needed.

In 2012, the City Council approved a modification to the approval to allow a well to be drilled to use for wash water. The DNR approved a water appropriation permit and the site has been using the well for wash water at times during the summer.

In 2017, the City approved a five-year extension along with a modification allowing larger capacity bulk storage tanks. This request runs through October, 2022.

The Planning Commission reviewed the initial request in November, 2022, and through discussion, there were a number of issues raised by some of the Planning Commissioners. Further information was needed to address the questions raised. Staff had Barr Engineer conduct a review of questions raised which focused on; results of well testing, impacts to aquifers relating to the request to excavate deeper, and groundwater quality. Bituminous Roadways also conducted further research regarding the raised concerns. The reports generated by Bituminous and Barr are attached to this report.

BACKGROUND

Bituminous Roadways, Inc. has submitted an application for an extension of their five-year Sand and Gravel Overlay Zoning District designation for their approximately 200 acre site. The operations at the existing site include the mining and removal, crushing, screening, washing, and stockpiling of aggregate for the asphalt plant, and the recycling and stockpiling of concrete and rock products. The main processing activities will include crushing, screening, and washing. Over the life of the facility, mining is proposed to occur on approximately 141 acres of the site and the remaining 60 acres is designated as a buffer area.

Approval of any Sand and Gravel Overlay Districts requires renewal every five-years. The current Sand and Gravel approval was granted on October 9, 2017, and expired on October 9, 2022. The site also operates under a Conditional Use Permit to allow for the asphalt plant, processing of sand and gravel and a contractor's yard with open storage. The Conditional Use Permit does not require renewal.

The applicant submitted a request for an extension before the current permit expired. Additional time was needed to review the request before it could be processed.

EVALUATION OF REQUEST

The site is surrounded by the following uses:

North – Vacant land; Zoned A, Agricultural; Guided Industrial Office Park

East – Open space, west 100 acres/agricultural; Zoned A, Agricultural and I-1, Limited Industry; Guided Limited Industrial

West – Open space/agricultural; Zoned A, Agricultural; Guided Rural Density Residential

South – Residential, Open space/agricultural; Zoned A, Agricultural; Guided Industrial Office Park

ANALYSIS

The analysis of this report consists of a review of each condition of the existing Sand and Gravel Temporary Zoning District approval as well as addressing the three proposed changes. The existing condition will be listed, followed by a response on the status of that condition and/or modification.

A. Sand and Gravel Temporary Zoning District

1. The Temporary Sand and Gravel (S&G) Zoning shall remain in place on the property for a period of five (5) years to expire on October 9, 2022.

The original schedule for approval would have occurred before October 9, 2022, but additional review time was needed as the City had its environmental consultant, Barr Engineering review the request to determine if there were any negative effects of allowing additional mining depth.

The application will be reviewed by the Environmental Commission on April 27, 2023, and City Council on May 22, 2023.

2. The operation of the sand and gravel operation approved herein shall comply with all provisions of Inver Grove Heights City Code, Title 10-13G, Sand and Gravel Zoning District, except as specifically modified herein.

No issues were found with this condition. Staff is not aware of any non-compliance with this condition.

3. The following plans, on file with the Planning Division, shall constitute the “approved plans” referenced therein:

Existing conditions dated 8/5/22

Phasing Plan dated 8/5/22

Cross Sections of Mining Area dated 8/5/22

Final Land Use Plan dated 4/25/02

Reclamation Plan dated 8/5/22

Landscaping Plan – east property line dated 2012

Landscape Plan – south property line dated 2012

All aspects of the operation of the site shall comply with the approved plans.

The site has been operating in accordance with the approved plans since the expansion was approved in 2002. The current Comprehensive Plan guides the area as IOP, Industrial Open Space. This category was created to serve as a buffer between heavier industrial uses (land fill, gravel pit and refinery) and residential uses. Industrial uses that are currently operating within this area would be allowed to continue operating under existing permits without further restrictions. The final land use plan shows large lot residential with a public street extending from Rich Valley

Boulevard. No sewer is expected on the west side of Rich Valley and, therefore, the lots would be served by their own well and septic system. No other issues existing with this condition.

4. The location of the asphalt plant shall remain in its existing position and shall not be relocated unless this sand and gravel ordinance is amended.

No changes proposed. No issues with this condition.

5. "Operation" as it relates to hours of operation, shall include, but is not limited to, all mining and grading operations, washing, the operation of the asphalt plant on the site, and movement of vehicles and equipment in and out of the site. Hours of operation on the site shall be limited to 7:00 a.m. to 7:00 p.m., Monday - Saturday, except hours of operation may begin at 6:00 a.m. Monday – Saturday for internal operations only, including start up of the asphalt plant and allowing BRI owned vehicles that were parked overnight to exit the site. The crushing of concrete and asphalt shall be regulated by condition #6.

No changes proposed.

6. Crushing of concrete on site shall be permitted provided the following conditions are met:

- a) All crushing operations shall be conducted in the current location in the existing site.
- b) The stockpile of concrete to be crushed and the stockpile of already crushed concrete shall not in the aggregate exceed a total of 50,000 cubic yards.
- c) The height of the stockpiles shall not exceed 25 feet.
- d) Crushing shall occur on not more than 12 weeks during the calendar year. No crushing shall occur on Sunday; crushing shall only occur between the hours of 7:00 a.m. and 7:00 p.m. Monday – Friday and 9:00 a.m. to 6:00 p.m., Saturday.

No issues with this condition. To our knowledge, the site operates under these conditions. Staff has not received any complaints that the operator is working outside of the approved hours.

7. Bituminous Roadways may temporarily store Manufactured Organic Shingle Scrap (MOSS) in open storage areas provided the areas in the aggregate do not exceed one (1) acre in size and provided the location and storage configuration is approved by the Fire Marshal and Director of Community Development. MOSS storage areas may be relocated as operations on the site change subject to the approval of the Fire Marshal and the Director of Community Development. The City may impose reasonable conditions relating to dust control, fire prevention and size, height and configuration of the storage piles.

Bituminous Roadways has not stored any shingle scrap on site for a number of years and don't plan to in the future. This condition should be removed.

8. The final disposal of MOSS on the site shall be prohibited.

Operational condition.

9. As part of the approval granted herein, the applicant may use used concrete and asphalt products as a part of the operation. Stockpiling area for these materials shall be as noted on the approved plans.

The proposed plans show the location of the product stockpiles. The stockpiles are generally located in the same location as previous approvals. No issues with this condition.

10. Bituminous Roadways shall prohibit all drivers of trucks from using Rich Valley Boulevard north of Cliff Road except in those instances where materials are being taken to a project located within the City's regulatory authority. Bituminous Roadways shall post an advisory to all drivers to the same effect at exits from the site.

No issues with this condition. To our knowledge, the site operates under these conditions.

11. The site shall be kept clear, at all times, of windblown debris.

No issues with this condition. To our knowledge, the site operates under these conditions.

12. The foundry sand in the southeast berm shall be left undisturbed.

The southeast foundry sand berm had been undisturbed and contained a vegetative cover. This condition has been satisfied.

13. Bituminous Roadways shall bring no additional foundry sand onto the site.

Operational condition. No additional foundry sand has been found on the site.

14. The berms which cover the foundry sand shall be maintained in vegetative cover to control erosion of the foundry sand.

This condition has been satisfied.

15. The stockpiled MOSS, shingle scrap, recycled asphalt, and concrete pavement will not be disposed of at the site.

No issues with this condition. To our knowledge, the site operates under these conditions.

16. Stockpiles of recycled asphalt, MOSS, shingles, and concrete shall be limited in size to amount that will be used that year.

No issues with this condition. To our knowledge, the site operates under these conditions.

17. Backfill material shall be either clean fill material that was stripped off the site or other clean fill material which is brought in from offsite.

Operational condition.

18. Spent bag house bags will be disposed of in a lined landfill permitted or approved to accept such materials.

Bituminous Roadways indicates the spent bags are disposed of at a landfill.

19. A restoration bond shall be in an amount to cover the costs of restoration of the site, as determined by the City Engineer, prior to City Council approval.

The City does have a restoration bond from Bituminous Roadways to cover the costs of restoration. The City Engineer indicates no changes are needed.

20. Bituminous Roadways shall obtain and maintain the necessary licenses and approvals from Dakota County and Minnesota Department of Natural Resources. Terms and conditions of the license and approval shall be hereby incorporated into this City approval.

Bituminous Roadways has provided the City with copies of all necessary permits from other agencies. The site is in compliance with this condition.

21. Bituminous Roadways shall obtain and maintain the necessary Minnesota Pollution Control Agency permits, including two air quality permits and one industrial storm water permit. The terms and conditions of those permits shall be hereby incorporated into this City approval.

Bituminous Roadways has provided the City with copies of all of the required permits. No notices of violation have ever been issued by the MPCA. The site is in compliance with this condition.

22. All reports which are required to be submitted to Dakota County under the single Hazardous Waste Generators License and one Processing License shall also be submitted to the City, including the required annual and quarterly reports.

During the 2012 renewal, it was discovered by Dakota County that as of 2003, the facility was no longer a hazardous waste generator and no reports were required. Condition should be eliminated with this renewal.

23. All reports which are required to be submitted to the Minnesota Pollution Control Agency shall also be submitted to the City, including annual emissions inventory report, semi-annual deviations report, annual compliance certification report, and annual report.

Bituminous Roadways has provided to the City copies of their reports submitted to the MPCA. The site is in compliance with this condition.

24. Monitoring shall be conducted at the single ground water well that consists of arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, DRO, GRO, phenol, pH, electric conductivity and alkalinity. The monitoring should occur with half the wells every other year. Parameters and protocols shall be as agreed to by Dakota County, the City and Bituminous Roadways.

Staff has received copies of the well tests. According to the project narrative, the sample concentrations show the levels below limits.

25. Monitoring of the east and west storm water ponds both wash water ponds and three wells shall be conducted every other year and shall be tested for the same elements as listed in condition #24 per the proposed testing schedule identified on the Water Testing Map.

No changes.

26. All buildings shall be removed from the site within three (3) months of the closure of the facility.

Operational Condition.

27. Bituminous Roadways shall enter into a Host Community Agreement with the City of Inver Grove Heights including the payment of host community fees, within three (3) months of the State Legislature providing the City with the Authority to enter into such an agreement.

The Legislature has not approved any regulations providing cities the authority to collect host community fees for sand and gravel extraction. This condition should remain for future action.

28. Restoration shall be conducted in phases at the site. As portions of the mining area are completed, the areas will be backfilled, graded, topsoil applied and vegetation established.

Operational condition. Engineering would review the backfilling operation to make sure the work is in compliance with the approved plans.

29. The operator is responsible for obtaining all required permits for the wash water well from the appropriate state and or county agencies and must meet all DNR requirements, obligations and protocols for a well appropriations permit, including responsibilities and protocols for any remedial actions and those responsibilities and protocols for any compensation or damages from the loss of well use affected neighboring properties. Any change or any application for an appropriation permit for an aquifer different than the one that has been identified would require an amendment to the conditional use permit.

The City approved the use of a new well to be utilized for washing the aggregate as part of the 2012 approval. The DNR approved a water appropriation permit for the site. The applicant has provided information from the DNR indicating the amount of water used each year.

30. Bituminous Roadways shall provide a voluntary well interference protocol agreement for neighboring properties within ½ mile of the well requesting to be a party thereto. The agreement shall be prepared by Bituminous Roadways and shall stipulate procedures to follow should well problems occur. The agreement between the parties is strictly voluntary and not required for the well to be operational.

Bituminous Roadways prepared an agreement that was part of the package approved by City Council in 2012. BRI has an agreement with 18 neighbors.

31. The southern access to the site shall be allowed as a secondary driveway for the operation provided it is used by no more than 10% of the truck traffic for the site.

Expansion of mining depth. Barr Engineering was retained to conduct an environmental review of the project to determine if there would be any negative effects of allowing deeper excavation. Barr reviewed the request against the following environmental impacts; air quality, groundwater quality, groundwater quantity, surface water quality, and noise. Barr's memo dated 9/29/2022 is attached to this memo. In conclusion, Barr does not see any negative impacts with the request, but does recommend some additional conditions related to back filling soil material since the material would be close to the water table. Essentially, non-contaminated and clean soils should only be used as back fill material. There are two new conditions (31 and 32) added to the ordinance that address Barr's recommendation.

Conditional Use Permit. The site operates under a conditional use permit for the asphalt plant and contractor's yard. No changes to the CUP are proposed. The majority of the conditions are part of the Sand and Gravel Overlay Ordinance and have been covered above.

ALTERNATIVES

The Planning Commission has the following actions available on the proposed project:

A. Approval: If the proposed request is found to be acceptable, approval of the applicable following actions should be taken:

- Approval of the **Temporary Sand and Gravel Zoning** Renewal for a period of five (5) years subject to the following conditions:

1. The Temporary Sand and Gravel (S&G) Zoning shall remain in place on the property for a period of five (5) years to expire on (council approval date), 2028.
2. The operation of the sand and gravel operation approved herein shall comply with all provisions of Inver Grove Heights City Code, Title 10-13G, Sand and Gravel Overlay District, except as specifically modified herein.
3. The following plans, on file with the Planning Division, shall constitute the “approved plans” referenced therein:
 - Existing conditions dated 8/5/22
 - Phasing Plan dated 8/5/22
 - Cross Sections of Mining Area dated 8/5/22
 - Final Land Use Plan dated 4/25/02
 - Reclamation Plan dated 8/5/22
 - Landscaping Plan – east property line dated 2012
 - Landscape Plan – south property line dated 2012

All aspects of the operation of the site shall comply with the approved plans.

4. The location of the asphalt plant shall remain in its existing position and shall not be relocated unless this sand and gravel ordinance is amended.
5. “Operation” as it relates to hours of operation, shall include, but is not limited to, all mining and grading operations, washing, the operation of the asphalt plant on the site, and movement of vehicles and equipment in and out of the site. Hours of operation on the site shall be limited to 7:00 a.m. to 7:00 p.m., Monday through Saturday, except hours of operation may begin at 6:00 a.m. Monday – Saturday for internal operations only, including start up of the asphalt plant and allowing BRI owned vehicles that were parked overnight to exit the site. The crushing of concrete which shall be regulated by Condition #6. The asphalt plant shall be allowed to operate a maximum of 30 night shifts (7:00 p.m. to 7:00 a.m.) during the construction season each year. Bituminous Roadways shall provide the city with written notice prior to each event, including confirmation of contact with the nearest neighbor so a record can be kept to monitor total hours used each season.
6. Crushing of concrete on site shall be permitted provided the following conditions are met:
 - a) All crushing operations shall be conducted in the current location in the existing site.
 - b) The stockpile of concrete to be crushed and the stockpile of already crushed concrete shall not in the aggregate exceed a total of 50,000 cubic yards.
 - c) The height of the stockpiles shall not exceed 25 feet.
 - d) Crushing shall occur on not more than 12 weeks during the calendar year. No crushing shall occur on Sunday; crushing shall only occur between the hours of 7:00 a.m. and 7:00 p.m. Monday – Friday and 9:00 a.m. to 6:00 p.m., Saturday.

7. The final disposal of MOSS on the site shall be prohibited.
8. As part of the approval granted herein, the applicant may use used concrete and asphalt products as a part of the operation. Stockpiling area for these materials shall be as noted on the approved plans.
9. Bituminous Roadways shall prohibit all drivers of trucks from using Rich Valley Boulevard north of Cliff Road except in those instances where materials are being taken to a project located within the City's regulatory authority. Bituminous Roadways shall post an advisory to all drivers to the same effect at exits from the site.
10. The site shall be kept clear, at all times, of windblown debris.
11. The foundry sand in the southeast berm shall be left undisturbed.
12. Bituminous Roadways shall bring no additional foundry sand onto the site.
13. The berms which cover the foundry sand shall be maintained in vegetative cover to control erosion of the foundry sand.
14. The stockpiled MOSS, shingle scrap, recycled asphalt, and concrete pavement will not be disposed at the site.
15. Stock piles of recycled asphalt, and concrete shall be limited in size to amount that will be used that year.
16. Backfill material shall be either clean fill material that was stripped off the site or other clean fill material which is brought in from offsite.
17. Spent bag house bags will be disposed of in a lined landfill permitted or approved to accept such materials.
18. A restoration bond shall be in an amount to cover the costs of restoration of the site, as determined by the City Engineer, prior to City Council approval.
19. Bituminous Roadways shall obtain and maintain the necessary licenses and approvals from Dakota County and the Minnesota Department of Natural Resources. Terms and conditions of the license and approval shall be hereby incorporated into this City approval.
20. Bituminous Roadways shall obtain and maintain the necessary Minnesota Pollution Control Agency permits including two air quality permits and one industrial storm water permit. The terms and conditions of those permits shall be hereby incorporated into this City approval.
21. All reports which are required to be submitted to the Minnesota Pollution Control Agency shall also be submitted to the City, including annual emissions inventory report, semi-annual deviations report, annual compliance certification report, and annual report.
22. Monitoring shall be conducted at the single water well that consists of arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, DRO, GRO, phenol, pH, electric conductivity, and alkalinity. The monitoring shall occur with half the wells every other year.

Parameters and protocols shall be as agreed to by Dakota County, the City and Bituminous Roadways.

23. Monitoring of the storm water ponds and wells shall be conducted every other year and shall be tested for the same elements as listed in condition #24 per the proposed testing schedule identified on the Water Testing Map.

24. All buildings shall be removed from the site within three (3) months of the closure of the facility.

25. Bituminous Roadways shall enter into a Host Community Agreement with the City of Inver Grove Heights including the payment of host community fees, within three (3) months of the State Legislature providing the City with the Authority to enter into such an agreement.

26. Restoration shall be conducted in phases at the site. As portions of the mining area are completed, the areas will be backfilled, graded, topsoil applied and vegetation established.

27. The operator is responsible for obtaining all required permits for the wash water well from the appropriate state or county agencies and must meet all DNR requirements, obligations and protocols for a well appropriations permit, including responsibilities and protocols for any remedial actions and those responsibilities and protocols for any compensation or damages from the loss of well use affected neighboring properties. Any change or any application for an appropriation permit for an aquifer different than the one that has been identified would require an amendment to the conditional use permit.

28. Bituminous Roadways shall provide a voluntary well interference protocol agreement for neighboring properties within ½ mile of the well requesting to be a party thereto. The agreement shall be prepared by Bituminous Roadways and shall stipulate procedures to follow should well problems occur. The agreement between the parties is strictly voluntary and not required for the well to be operational.

29. The southern access to the site shall be allowed as a secondary driveway for the operation provided it is used by no more than 10% of the truck traffic for the site.

30. For soil backfill material, only non-organic compactable soil material be used that is free of contamination, recycled or salvaged aggregate, asphaltic pavement, crushed concrete, scraps of shingles, debris, rubbish, frozen soil, boulders over 1-inch in diameter, logs, wood chips or other objectionable material. Backfill soil should be free of stumps, roots, and branches over 1.5- inches in diameter. Backfill soils should not be placed over frozen subgrade.

31. Contaminated soil shall not be used as fill or brought to the site. If the source of imported fill will be from a location where soil contamination is known, suspected, or can be expected (e.g., soils from gas stations, certain industrial sites, etc.), that soil should not be used for backfilling. Any offsite backfill soil used must come from only BRI projects and include a manifest from each site indicating that no contaminants are suspected to be in the soil material. A copy of the manifest should be submitted to the City.

32. Bituminous Roadways shall review and amend the SPCC Plan as appropriate and submit a copy to the City. The SPCC Plan shall document practices, personnel, equipment, and resources available to prevent a spill and what actions to take if a spill were to occur.

33. A well on the Wicker property has been part of the monitoring process. A new deeper well was constructed on the Wicker property in 2020 and should no longer be used as an indicator of downgradient water quality from the BRI facility because the new well is too deep to intersect groundwater flow paths from BRI. To provide property well monitoring, BRI shall be required to install a monitoring well with a well screen intersecting the water table on the Wicker property to provide early detection of groundwater impacts from the operation at this location.

34. All the BRI wells should be periodically sampled for metals commonly associated with foundry sand including arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, copper, nickel and zinc.

35. BRI shall prepare a Sampling and Analysis Plan using Minnesota Pollution Control Agency guidance that would include sample parameters, sample schedule and requirements for purging wells to stabilize prior to sampling, and field filtering of samples if appropriate.

B. Denial: Should the proposed request, or portions thereof, not be found to be acceptable, the appropriate requests described above should be denied. The basis for denial must be stated in any such motion.

RECOMMENDATION

Bituminous Roadways has provided additional information to address the questions and concerns raised by the Planning Commission. Barr Engineering has also responded to the questions in the attached report. Based on the report, Barr did not find any issues that would lead to a non-support of the additional mining depth and did not find any concerns regarding the well tests as they relate to chemicals found.

Based on this information, Staff recommends **Alternative A**, approval of the request with the conditions listed.

ATTACHMENTS

1. Summary of EAC Meeting
2. Site Location
3. Barr Technical Review Memorandum dated 02-28-2023
4. Sunde Engineering Memorandum dated 03-27-2023
5. Sunde Engineering Memorandum dated 12-21-2022
6. Sunde Engineering Memorandum dated 11-18-2022
7. Barr Technical Review Memorandum dated 09-29-2022
8. Application Packet including Plans
9. Existing Conditions Map
10. Current Sand and Gravel Ordinance



M E M O

CASE NO: 22-37ZC

APPLICANT: Bituminous Roadways

Summary of April 27, 2023 Environmental Advisory Commission meeting

At the request of the Planning Commission, The EAC reviewed the request at their meeting Thursday night.

Last November, the Planning Commission reviewed the request and there was considerable discussion regarding possible impacts to the aquifers on allowing deeper excavation and if there were any impacts to wells as a result of the operation as a whole. Both Barr Engineering and Bituminous Roadways conducted further research on these topics and their reports are attached to the staff report

Staff made a brief presentation and then Barr Engineering provided a slideshow to help illustrate and answer the groundwater and well impact questions. Bituminous Roadways made a brief presentation before the EAC began their discussion.

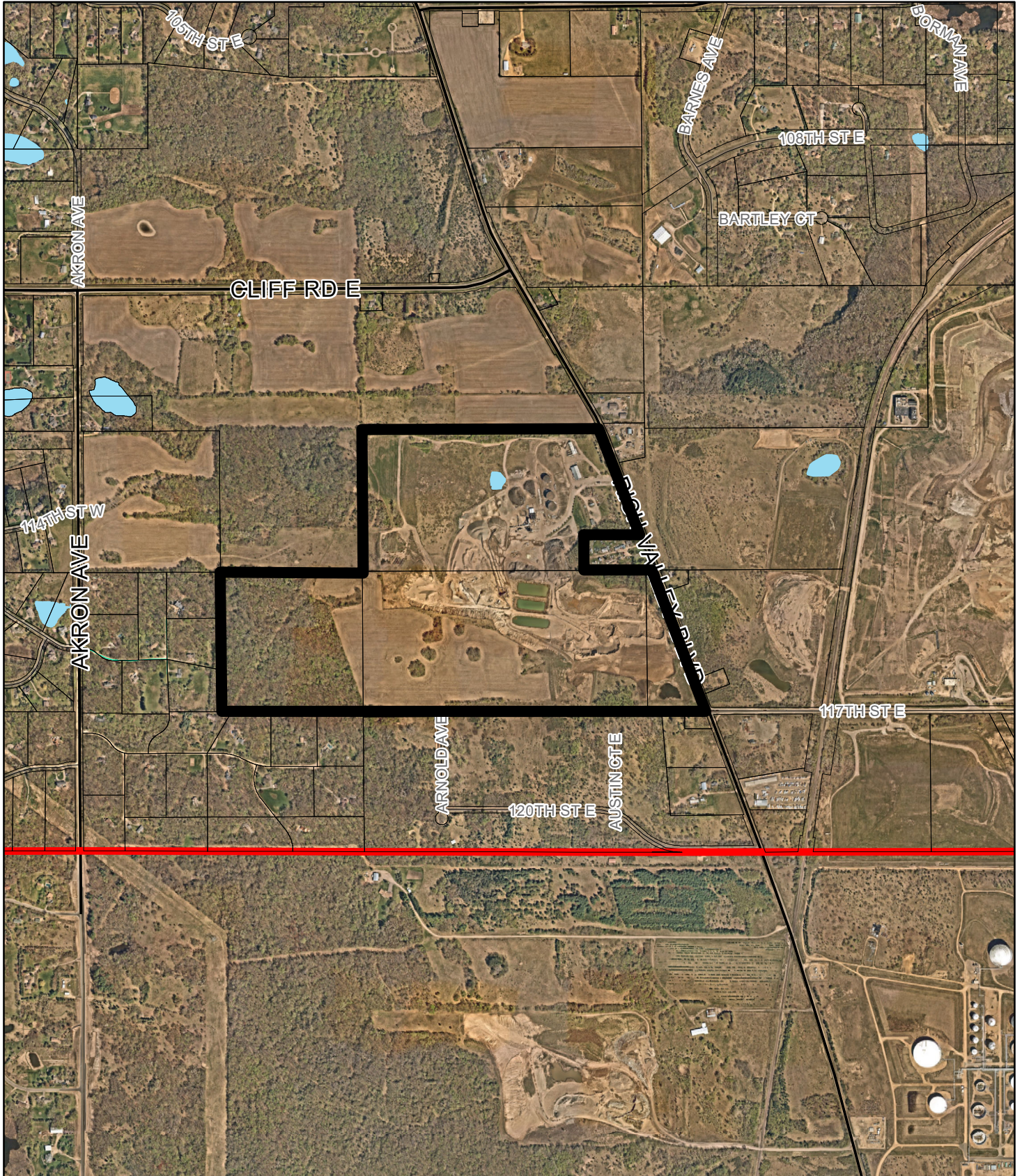
The EAC recommended to approve the five year Sand & Gravel Ordinance extension with the modification to allow mining to a depth of 800 feet below mean sea level (7-0-1). Their discussion included:

1. A timeline should be established to add the new monitoring well on the Wicker property per the recommendation of Barr.
2. Edit the report to remove references to scrap shingles.
3. Well testing to every year was brought up but unclear what the EAC concluded.



Location Map

Case No. 22-37SC



Technical Memorandum

To: Ally Sutherland and Allan Hunting
From: Ray Wuolo, P.E., P.G., Samantha Schirmer, and Jeff Ubl, P.E.
Subject: Bituminous Roadways, Inc. (BRI) – Environmental Review of Proposed Expansion
Date: February 28, 2023
Project: 2319-0218

This memorandum provides Barr Engineering Co.'s (Barr) second review of potential environmental-related impacts from BRI's proposed expansion of their sand-and-gravel mining operation located on Rich Valley Boulevard and includes replies to four questions posed by the Inver Grove Heights Planning Commission.

Background

Barr's September 29, 2022 memorandum provided an initial review of potential environmental-related impacts from BRI's proposed mine expansion. The review focused on potential impacts related to air quality, groundwater quality and quantity, surface-water quality, and noise. In that memorandum, Barr recommended that the City's Conditional Use Permit require that soil used to backfill the mine be clean, non-organic soil and that a Spill Prevention, Control, and Countermeasure (SPCC) Plan be developed and submitted to the City.

Subsequently, the Inver Grove Heights Planning Commission met on November 1, 2022 to review and consider the BRI proposed mine expansion. Following that meeting, the Planning Commission had several questions and the City assigned four of those questions to Barr for evaluation and response.

Barr's understanding of the proposed BRI expansion, a response to each of the four Planning Commission questions assigned to Barr, and our conclusions and recommendations are provided below.

Proposed Expansion

Barr's understanding of the proposed BRI sand-and-gravel expansion is based on:

- The Conditional Use Permit (CUP) application and seven-sheet plan set, both dated August 5, 2022, and prepared by Sunde Engineering, PLLC (Sunde)
- The September 22, 2022, virtual meeting with BRI, Sunde, and City staff

From this information, we understand the following:

- The proposed maximum mining depth will increase by 40 feet from elevation 840 feet to elevation 800 feet
- The water-table aquifer beneath the site flows generally from west to east
- The proposed expansion will increase the life of the mine by approximately 10 years
- The same equipment currently in use at the mine will continue to be used for the expansion with no increase in equipment number, size, or type
- The mining rate will remain the same for the expansion, including the frequency of truck trips to and from the operations
- The proposed operating aerial footprint of the mine will not increase for the proposed expansion
- The location and quantity of fuel, asphalt cement, and other chemical storage will not change from the current operation
- Backfilling of the mine is expected to consist of (1) excess sand from the operation and (2) clean soil from off-site BRI construction projects
- Per Minnesota Rules 4410.4300, subpart 12, the proposed expansion does not trigger a mandatory Environmental Assessment Worksheet (EAW)
- After mining operations are completed, topsoil will be placed over the site, the area will be re-vegetated, and the end use will include agriculture and potentially residential lots

Evaluation of Planning Commission Questions

As indicated above, several questions were posed by the Inver Grove Heights Planning Commission following the Commission's November 1, 2022 meeting. The City requested that Barr review and evaluate four of the Planning Commission questions. For reference, each of the four unedited questions are re-stated in italic text below and are followed by Barr's evaluation and response.

Question #1:

A third image from the same location West from the East Access looking north shows what appears to be wet sand caused by contact with the Prairie Duchenne aquifer. This is concerning as there is foundry sand being stored near this location. It appears that the Barr report incorrectly has identified the water level or BR has excavated below the approved depth at this time. Barr report PDF page 54.

Barr's Evaluation and Response to Question #1:

The location of the foundry sand stockpile is located on the east-central portion of the BRI site. The image referenced in the Question #1 is provided as Figure 1 of this memorandum. A cross-sectional view of the current and proposed expanded mine depth in relation to the water table, and the top of the Prairie du Chien-Jordan aquifer and top of the Tunnel City-Wonewoc aquifer is shown on Figure 2.

As indicated in Barr's September 2022 memorandum, the elevation of the water table at the site is approximately 800 feet above mean sea level (msl). Static water levels measured in wells close to the BRI site, as reported in the Minnesota Well Index (MWI), range in elevation from 785 feet msl (Well No. 159480) to 792 feet msl (Well No. 821155). The current lowest depth of mining is approximately

840 feet and the proposed depth of mining is approximately 800 feet. The darker soils shown on Figure 1 may be due to higher moisture in the soil but darker soils could also be due to other factors. However, the darker soil in the photograph provided by the Planning Commission is at least 40 feet above the water table. Dark and/or moist soil conditions can be caused by many different activities and conditions that have nothing to do with the water table. Given that there is 40-plus feet of separation between the water table and the elevation of the soil shown in the photograph, we can say with certainty that the darker soils are not due to intersection or close proximity to the top of the water table.

Question #2:

Page 2 of the Sept 29th Barr, PDF page 55 mentions the "Groundwater Quality" Barr states dewatering isn't required and Nearby wells wont be negatively impacted, there is no mention of the High Volume Well installed in 2012 that removes 450 GPM. A scientist from the DNR present at the public meeting in 2012 describes this well as the perfect storm. Well tests have been required on these and several other wells in the area and the City has been provided copies of the report as IGH is the RGA

Barr's Evaluation and Response to Question #2:

The "High Volume Well" (i.e., wash-plant well) was actually installed in May 2013 (Well No. 780331). The wash-plant well was drilled to a depth of 645 feet below ground surface and cased from ground surface to a depth of 465 feet. The open-hole section of the wash-plant well (depth of 465 to 645 feet) is in the Tunnel City-Wonewoc aquifer, as shown in the cross section (Figure 2). The wash-plant well is used for sand-and-gravel washing at BRI's wash plant. The wash-plant well was designed to achieve a maximum instantaneous pumping capacity of 450 gallons per minute (gpm) and was tested during a pumping test in May 2013 at a sustained rate of 700 gpm for 4 hours with a drawdown in the wash-plant well of 130 feet.

The DNR scientist referenced was hydrogeologist Scott Pearson. Mr. Pearson used the term "perfect storm" in the context of overall high water usage in Dakota County following a period in the 2000s when below-average rainfall, combined with higher use of groundwater for lawn irrigation in Dakota County, was resulting in a general trend of lowering of the potentiometric surface for the Prairie du Chien-Jordan aquifer. The wash-plant well proposed by BRI was originally planned to be completed in the Prairie du Chien-Jordan aquifer. Mr. Pearson expressed concern that the proposed wash-plant well would further stress the Prairie du Chien-Jordan aquifer because it is the most used aquifer in northern Dakota County and the source of water for the City of Inver Grove Heights' wells. Nearby Flint Hills Refinery was also producing water from Prairie du Chien-Jordan wells. The DNR was encouraging the new wash-plant well to be completed deeper, in the lightly used Tunnel City-Wonewoc aquifer (formerly called the Franconia-Ironton-Galesville aquifer). The City and BRI agreed to complete the proposed wash-plant well in the Tunnel City-Wonewoc aquifer. To be clear, the reason for completing the wash-plant well in the Tunnel City-Wonewoc aquifer was to not add to the overall water demand in the Prairie du Chien-Jordan aquifer in this portion of Dakota County. There

were no concerns or issue expressed that a wash-plant well in the Tunnel City-Wonewoc aquifer would have any effect on groundwater quality.

We have performed a groundwater modeling analysis of the effects of pumping BRI's wash-plant well. The results of the modeling are present in the response to Question #4.

Question #3:

*The well water testing reports provided indicate a series of mishandling problems with the water collection protocols used. Several time samples were not collected properly, seals were not intact, Time span from collection did not meet requirements for proper testing. Additionally the amounts of toxic chemicals seem to be increasing over time. The required discrepancy reports have not been made available **Attached is a PDF** indicating the rules that were agreed to in the overlay agreement. I think the city should address who is responsible for monitoring the reports received from BW in the past and what actions, if any, were taken to assure compliance with ordinances and to mediate, protect the groundwater and nearby wells.*

Can an explanation of what is the responsibility of the RGA and who holds this duty in regard to the BR Mine

Barr's Evaluation and Response to Question #3:

As part of this review, BRI provided analytical reports associated with sampling events conducted from 2012 through 2022 for the purposes of evaluating the data quality and comparing against hazard index criteria. The documentation provided was scanned PDFs of laboratory reports and field notes from the timeframe noted, not the analytical reports in their original form. Review of the documentation was limited to what was provided to Barr for these purposes and may not be inclusive of all the available data for this time span.

All data was reviewed using Barr standard operating procedures (SOPs) for data review which are based, in part, on elements found in the EPA's National Functional Guidelines and/or the guidance provided within the accepted analytical methods. Modifications were made as necessary to accommodate for the types of data quality measures provided for review.

Table 1 presents the groundwater and surface water analytical results from 2012 through 2022.

Hold Times and Sample Handling

The pH analysis conducted at the laboratory and submitted with each sampling event was analyzed past the recommended method holding time (within 15 minutes). As a practical consideration, pH analysis completed at the laboratory (not in the field) will always be outside of recommended hold times. Following standard practices, affected samples were qualified accordingly.

Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) results associated with the 2022 report were analyzed past the recommended method holding times. Affected 2022 samples were

qualified accordingly. The remaining DRO and GRO analyses from 2012-2022 were performed within recommended hold times.

In several cases, samples were received at the laboratory above 6°C; however, the samples arrived within 6 hours of sampling and most arrived on ice. Thus, no qualification was required.

Certain sample containers submitted for GRO analysis contained headspace. GRO sample results associated with headspace were qualified accordingly as estimated values, potentially being biased low (J-).

In a single instance, a sample submitted for Specific Conductance analysis was not filtered within the 24 hours, as specified by the method. The sample result was qualified accordingly as analyzed outside of hold and should be considered an estimated value.

Blanks

Laboratory blanks are a measure of potential contamination introduced in the laboratory, either during the analysis, the preparation work leading to analysis, or storage conditions at the laboratory. All method blanks associated with the data provided were below method detection limits for all target analytes.

Trip blanks were submitted and reviewed as part of each sampling event. Trip blanks represent the potential sample contamination as a part of sample transport conditions and typically used to monitor volatile organic compounds (VOCs). All trip blanks were below method detection limits for all target VOCs (including GRO).

General Precision and Accuracy Observations

Laboratory control sample (LCS) and Laboratory Control Sample Duplicate (LCSD) are samples of analyte-free media spiked with known concentrations of target analytes that are carried through the same sample preparation and analytical procedures. LCS recoveries are used to estimate overall analytical method accuracy independent of sample matrix effects. The calculated Relative Percent Difference (RPD) between the LCS and LCSD is used to assess overall analytical method precision. All LCS/LCSD recoveries and RPD values met acceptance criteria unless otherwise specified.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples are two aliquots of a sample to which known quantities of analytes are added (spiked) in the laboratory. The MS and MSD are prepared and analyzed exactly like their original/source sample aliquot. The purpose of the MS and MSD is to quantify the bias and precision caused by the sample matrix. All MS/MSD recoveries and RPD values met acceptance criteria unless otherwise specified.

A laboratory duplicate is a second aliquot of a sample that is treated the same as the original sample to determine the precision of the method. All calculated laboratory duplicate RPD values met acceptance criteria unless otherwise specified.

Surrogate standards are added to each sample for organic analyses (method blanks, spiked samples, project samples, and quality control samples) prior to sample extraction (DRO and GRO). Surrogates are similar to analytes of interest in chemical composition, extraction, and chromatography but are not typically found in environmental samples. Surrogate recoveries are used to evaluate the analytical method efficiency. All surrogate recoveries met acceptance criteria unless otherwise specified.

Analytical reports from 2016 through 2020 had missing quality control results and criteria for the parameters reported. Furthermore, in a single instance, trip blank results were not included in the 2018 report as documented with the sample receipt information. For reports for which neither quality results nor criteria were available, the available data was reviewed.

Analytical reports from 2021 and 2022 had the following quality control criteria missing from the analytical reports: (1) laboratory duplicate criteria for Specific Conductance, Total Alkalinity, and pH analyses, and (2) MS/MSD criteria for EPA 200.7, EPA 200.8, Total Recoverable Phenolics, and EPA 7470A analyses. The quality control results associated with this missing criterion were compared to method requirements and were determined to be acceptable; thus, no qualification was required. Where laboratory control limits were available for review, all met laboratory acceptance criteria except as noted above with respect to recommended hold times associated with various target parameters.

The associated method blank, LCS/LCSD, MS/MSD, sample surrogate, and laboratory duplicate results for the report parameters were reviewed for accuracy and precision. Specific field quality control samples were neither included nor evaluated in the reports.

No exceptions were noted concerning data quality and integrity, except for those mentioned above. All sample results submitted for review are acceptable as reported and qualified, based on the available quality control information provided for review.

Summary of Data Quality Review

It is our opinion that the water-quality analyses are generally acceptable and reliable. Greater care should be exercise in collecting volatile organic samples such as DRO and GRO to ensure that there is no head space in the sample vials. We also recommend that the City require BRI to submit an annual report of sampling and analyses results for review. The report should include a discussion of QA/QC review and time-series plots of analytes in order to determine if there are increasing concentration trends.

Water Quality Trends

Time-series of plots of barium, copper, lead, and zinc concentrations in pond water and monitored wells are presented in Figure 3 through Figure 6. These are naturally occurring metals but are also often associated with spent foundry sand. Barium, copper, and lead have US EPA primary drinking water standards (Maximum Contaminant Limits or "MCLs") based on toxicity profiles. Zinc has only a secondary drinking water standard, based on taste and odor. There have not been any exceedances of MCLs. However, in 2016 and 2017, the laboratory's maximum quantifiable detection limit for lead for

the stormwater pond was 20 µg/L, which is greater than the MCL of 15 µg/L. Similarly, the laboratory's maximum quantifiable detection limit for lead in 2017 was 20 µg/L. It is important to note that lead was not detected in these instances but the laboratory maximum quantitation detection limit was greater than the MCL. Therefore, in the time-series plots, the maximum quantifiable detection limit is plotted although lead was not detected. In the future, laboratory quantification limits should be lower than the MCLs. To date, the data do not show any temporal trends that would suggest increasing concentrations over time.

Question #4:

*The High Volume industrial well that was installed after much public discussion, was agreed that this well would be placed at a depth of approx 600' below grade drawing water from the tunnel city confined aquifer rather than the proposed 183' that would have put this well in the Prairie du Chien-Jordan unconfined aquifer. **PDF Side View elevation of water levels attached, also attached as a PDF is a description of 3 aquifers most impacted***

Barr's Evaluation and Response to Question #4:

The "PDF Side View" referenced appears to be a three-dimensional potentiometric surface map of the Prairie du Chien-Jordan aquifer in Hennepin County, generated using the geostatistical program Surfer®. Without knowing the source (who created it), when it was created, what data were used, etc., it is difficult to say much more about this, except to note that it does not appear to include the Inver Grove Heights area. While it has a scale, it has no north arrow or geographic features to orient oneself.

The pdf "description of 3 aquifers most impacted" is an excerpt from the Metropolitan Council's report on Metro Model 3. Metro Model 3 (initially completed in 2014) is the most up-to-date and comprehensive groundwater flow model of the 11-County metro area. It was developed by Barr for the Metropolitan Council and has undergone extensive peer review by hydrogeologists from state and federal agencies, Dakota County, University of Minnesota, and private consultants. It continues to undergo regular updating and recalibration and is used by or for MPCA, MDNR, Metropolitan Council, USGS, local governments, and consultants to address groundwater and water appropriations issues. The report excerpted was prepared by Barr for the Metropolitan Council.

The question implies that there are three aquifers impacted (presumably by the wash-plant well completed in 2013 and described in our response to Question #2). Barr interprets this question to be a concern that the operation of the wash-plant well is adversely impacting groundwater levels and groundwater flow directions. We used Metro Model 3 to address this concern.

Confined aquifers are under pressure, which means that when a well is drilled into a confined aquifer (but not pumped), the water level in the well rises to an elevation that is above the top of the aquifer. This water level is referred to as "potentiometric head" or "piezometric head." A water-table aquifer is under only atmospheric pressure. When a well is drilled into a water-table aquifer, the water level in the unpumped well is the same as the water level in the aquifer adjacent to the well (i.e., the static

water level elevation measured in the well is the same as the water table). When we refer to a “water-table aquifer,” we are referring to an aquifer in which there is no confining layer. In the metro area, the uppermost aquifer is almost always a water-table aquifer and all aquifers below it are confined aquifers. The Tunnel City-Wonewoc aquifer is confined in the vicinity of the BRI site. All of these aquifers are represented in Metro Model 3.

We assigned a steady-state pumping rate to the wash-plant well in the model simulation. The pumping rate used in the model is the average of the annualized pumping rates reported to the MDNR (2013 through 2021); 29.2 million gallons per year (55 gpm).¹ The model calculates the change in “groundwater levels” (potentiometric heads for all the confined aquifers and aquitards and the water-table elevation for the unconfined aquifer). The change in groundwater levels due to pumping is termed “drawdown.” Drawdown is greatest in the aquifer being pumped (Tunnel City-Wonewoc aquifer) immediately adjacent to the pumping well and decreases logarithmically moving away from the well. Drawdown in a confined aquifer can also induce drawdown in overlying and underlying aquifers by inducing leakage through confining units. When a well ceases pumping, water levels recover (i.e., “rebound”) to pre-pumping conditions. In a confined aquifer (such as the Tunnel City-Wonewoc aquifer), recovery is very rapid—typically measured in hours or days. We used the model to examine these conditions.

Contours of the predicted drawdown in the Tunnel City-Wonewoc aquifer that result from pumping the BRI wash-plant well are shown on Figure 7. The drawdown (i.e., the lowering of the potentiometric surface) in the Tunnel City-Wonewoc aquifer is predicted to be less than about 2 to 4 feet beyond the boundaries of the BRI facility. The nearest water-supply well completed in the Tunnel City-Wonewoc aquifer is located within the Flint Hills Refinery and is predicted to experience a drawdown of less than 0.5 feet due to pumping of the BRI wash-plant well and would not experience any measurable reduction in well yield, given the several hundred feet of available drawdown in the Flint Hills Tunnel City-Wonewoc well.

The model also predicted drawdowns in the overlying Jordan Sandstone, Prairie du Chien Group, and the Quaternary sand-and-gravel aquifer. We do not present contour maps of these drawdowns because there is virtually no predicted drawdown in these aquifers in response to pumping of the BRI wash-plant well (i.e., the drawdowns are so small that there is nothing to contour). This is because the St. Lawrence Formation (which separates the Tunnel City Formation from the Jordan Sandstone, Prairie du Chien Group, and Quaternary sand-and-gravel aquifer) is a regional confining layer with very low permeability. The St. Lawrence Formation essentially prevents the effects of pumping of the BRI wash-plant well from propagating to these shallower aquifers. Nearly all of the wells in this part of Inver Grove Heights are completed in either the Quaternary sand-and-gravel aquifer or in the Prairie

¹ Annual pumping rates range from 19.0 MGY (2015) to 39.3 MGY (2019).

du Chien-Jordan aquifer. The modeling predicts that none of these wells will be affected by pumping of the BRI wash-plant well.

BRI proposes to deepen their mining within the same mine footprint from approximately 840 feet msl to 800 feet msl (a deepening of 40 feet). The water table at the BRI site is about 8 to 15 feet below the proposed 800-foot elevation for the mine pit. The proposed change in mining depth will not change the rate of groundwater recharge to the water table, nor will it not result in pumping or leakage from the water-table aquifer. Therefore, groundwater flow direction in the water-table aquifer and the Prairie du Chien-Jordan aquifer will remain the same after the mine is deepened to 800 feet msl.

The direction of groundwater flow in the water-table aquifer and in most confined aquifers in this part of Dakota County is east, toward the Mississippi River. The Mississippi River is the regional discharge zone for all aquifers, with the exception of the very deep Mt. Simon-Hinckley aquifer. We used Metro Model 3 to simulate the direction and rate (velocity) of groundwater flow in the water-table aquifer originating from beneath the footprint of the BRI site. Groundwater flow directions are shown on Figure 8 for groundwater times-of-travel from the BRI site of 1, 5, 10, and 20 years. A cross-sectional depiction of groundwater flow is shown on Figure 9. Groundwater flows under the Pine Bend/SKB landfill and discharges into the Mississippi River in about 50 years. This flow rate and time-of-travel is for groundwater—not contaminants/solutes. Dissolved solutes, such as metals, flow in water at a much slower rate due to natural attenuation processes. Groundwater from the BRI facility flows eastward, beneath Pine Bend Landfill and discharges into the Mississippi River. Groundwater originating at the BRI facility does not move downward into bedrock aquifers. With the exception of the two Wicker wells (one sealed in 2020 and a new well installed in 2020), we have not identified any residential or water-supply wells along the groundwater flow paths from the BRI facility to the Mississippi River. The Wicker well that was sealed in 2020 had exceedances of the EPA secondary drinking water standard for aluminum and iron in 2019. Aluminum and iron were not analyzed at any other ponds or wells at BRI from 2012 through 2022. No other parameters in the wells or ponds exceeded standards (EPA Maximum Contaminant Level, EPA Secondary Drinking Water Standard, and Minnesota Department of Health, Health-Based Values). It should be noted that EPA Secondary Drinking Water Standards are guidelines for contaminants that may cause cosmetic or aesthetic effects in water such as taste, odor, and color. EPA does not require drinking water systems to comply with secondary standards.

Other parameters (arsenic, calcium, copper, lead, magnesium, manganese, nickel, sodium, and zinc) were detected (but at concentrations below standards) in one or both of the Wicker wells. Six parameters (aluminum, calcium, iron magnesium, manganese, and sodium) were analyzed at one or both of the Wicker wells but were not analyzed at other BRI ponds or wells. Out of all other parameters (arsenic, copper, lead, nickel, and zinc) detected in one or both of Wicker wells only copper was detected at a concentration greater than other BRI ponds or wells.

It is difficult to meaningfully compare water-quality data for the Wicker wells, before and after the April 2020 replacement of the original Wicker well. The replacement Wicker well is approximately 60 feet deeper than the original Wicker well, which means that the two wells likely sample different depths of the sand-and-gravel aquifer. The reasons for replacement of the well are not known. The deeper screen interval of the new Wicker well makes it much less likely to draw and sample water originating from the BRI facility than a shallower well and is therefore more likely to not be affected by water infiltrating to the water table at the BRI facility. The greater depth of the replacement Wicker well provides greater protection for the users of the well with respect to potential groundwater impacts from the BRI facility. However, the Wicker well as it is currently constructed does not provide a reliable monitoring point for water-quality impacts from the BRI facility because it almost certainly does not intersect the likely groundwater flow paths from BRI (the flow paths will be right at the top of the water table and not at the screen depth).

Conclusions and Recommendations

We have attempted to answer the City's questions as best we can, using the most up-to-date tools and data that are available to us. Based on the analyses described in this memorandum, the following conclusions and recommendations are provided.

Conclusions

1. Any moist or discolored soils at the BRI site that have been observed are not the result of intersecting or otherwise contacting the water table. Currently, the water table is about 50-65 feet below the floor of the mine pit. There will be less separation between the ultimate floor of the mine pit and the water table at full depth but at the proposed full depth there will still be 8-15 feet of separation between the pit floor and the water table.
2. None of the water-quality data that have been collected show that primary drinking water standards have been exceeded for constituents analyzed. Furthermore, there are no indications of increasing trends. Temporal variability in water-quality parameter data is typical for naturally occurring concentrations. Data quality standards for analytes have generally been met.
3. Based on the analytical data review, we believe there is a need for a more formal submittal of data to the City on an annual basis. Water-quality data review needs to be conducted annually that includes not only laboratory procedures but sampling procedures and sample handling.
4. In 2012, the City required that BRI's wash-plant well be completed in the Tunnel City-Wonewoc aquifer to ensure that existing groundwater users would not be adversely impacted. Our analyses shows that no well users are being affected by the operation of this well. The drawdown effects from the well are localized within the Tunnel City-Wonewoc aquifer and do not extend into the Prairie du Chien-Jordan aquifer nor the water-table aquifer.

5. Groundwater flow direction is naturally eastward toward the Mississippi River. Groundwater flow directions and rates in the water-table aquifer are unaffected by pumping of the BRI wash-plant well and water infiltrating within the footprint of the BRI facility is not moving downward into bedrock aquifers. Deepening mining from current depths to an elevation of 800 feet msl will not affect the rate or direction of groundwater flow. Groundwater originating at the BRI facility flows eastward underneath Pine Bend Landfill and discharges into the Mississippi River after approximately 20 years. With the exception of the Wicker well installed in 2020, we have not identified any groundwater users between the BRI facility and the Mississippi River.

Recommendations

1. Barr recommends that BRI submit an annual report to the City that includes water-quality and water-use data for the reporting year, as well as previously collected data. A QA/QC review of water-quality data should be included. We also recommend requiring the inclusion of time-series graphs of monitored parameters (referenced to applicable standards). Quantitative detection limits must be well-below any applicable standards. We also recommend that the City require BRI to perform an assessment of suitability and reliability of current groundwater monitoring wells and make recommendations for replacement or additions of wells.
2. We recommend that an annual report be submitted to the City that includes time-series trend analyses, QA/QC review, a summary of operations (including pumping records), and water-level data. This report should not simply be a “data dump” but include analyses and explanations of data trends.
3. The City’s CUP contains requirements for soil backfilling. For soil backfill material, Barr recommends only non-organic, compactable soil material be used that is free of contamination, recycled or salvaged aggregate, asphaltic pavement, crushed concrete, scraps of shingles, debris, rubbish, frozen soil, boulders over 1 inch in diameter, logs, wood chips or other objectionable material. Backfill soil should be free of stumps, roots, and branches over 1.5 inches in diameter. Backfill soils should not be placed over frozen subgrade.

Contaminated soil should not be used as fill or brought to the site. If the source of imported fill will be from a location where soil contamination is known, suspected, or can be expected (e.g., soils from gas stations, certain industrial sites, etc.), that soil should not be used for backfilling. Therefore, it is further recommended that offsite backfill soil come from only BRI projects and include a manifest from each site indicating that no contaminants are suspected to be in the soil material. A copy of the manifest could be submitted to the City.

4. Barr recommends that BRI review and amend the SPCC Plan as appropriate and submit a copy to the City. The SPCC Plan should document practices, personnel, equipment, and resources available to prevent a spill and what actions to take if a spill were to occur.

5. The Wicker well installed in April 2020 is a deeper well than the sealed Wicker well and is completed in the sand-and-gravel aquifer that likely provides added protection against the likelihood that the water quality of this well will be impacted by water originating as infiltration across the BRI facility. However, the new Wicker well should no longer be used as an indicator of downgradient water quality from the BRI facility because this well is now too deep to intersect groundwater flow paths from BRI. This well can continue to be sampled but the water-quality data from the well should not be used as an early indicator of groundwater impacts from the BRI facility. If the City wishes to have a well to provide early detection of groundwater impacts from BRI at this central location, a monitoring well with a well screen intersecting the water table should be installed.
6. Periodically sample all BRI wells and ponds for metals commonly associated with foundry sand including arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, copper, nickel, and zinc.
7. Prepare a Sampling and Analysis Plan using Minnesota Pollution Control Agency guidance that would include sample parameters, sample schedule and requirements for purging wells to stabilize prior to sampling, and field filtering of samples if appropriate.

To: Ally Sutherland and Allan Hunting
From: Ray Wuolo, P.E., P.G., Samantha Schirmer, and Jeff Ubl, P.E.
Subject: Bituminous Roadways, Inc. (BRI) – Environmental Review of Proposed Expansion
Date: February 28, 2023
Page: 13

Table

Table 1
2012-2022 Water Analytical Results
Bituminous Roadways, Inc.
Inver Grove Heights, MN

						Location Date	Epond 5/14/2012	Plan Well 5/16/2013	Plan Well 10/16/2015	Plan Well 6/18/2019	Plan Well 8/3/2021	Rainbow Well 5/21/2012
Parameter	Analytical Method	Units	EPA Maximum Contaminant Levels	EPA Secondary Drinking Water Standards	MDH Human Health- Based Water Guidance Table							
Last Updated			03/01/2018	03/01/2018	03/24/2022							
Exceedance Key			No Exceedances	Bold	No Exceedances							
Alkalinity, total, as CaCO3	SM 2320B	ug/l				56000	270000	275000	254000	249000	260000	
pH	SM 4500-H+B	pH units		6.5 - 8.5		7.54 H	6.98 H	7.5 H	7.8 H	8.0 H	7.29 H	
Solids, total suspended	USGS-I-3765-85	ug/l				--	--	--	--	--	--	--
Specific conductance @ 25 °C	SM 2510 B	umhos/cm				--	--	--	642	615	--	--
Specific conductance @ 25 °C	EPA 120.1	umhos/cm				140	670	665	--	--	690	
Total Metals												
Aluminum	EPA 200.8	ug/l		50 (1)		--	--	--	--	--	--	--
Antimony	EPA 200.8	ug/l	6		6 HRL93	--	--	--	--	--	--	--
Arsenic	EPA 200.7	ug/l	10			--	--	< 20.0 U	--	--	--	--
Arsenic	EPA 200.8	ug/l	10			--	--	--	< 1.5 U	< 0.50 U	--	--
Arsenic	EPA 6010C	ug/l	10			< 20 U	< 20 U	--	--	--	< 20 U	--
Barium	EPA 200.7	ug/l	2000		2000 HRL93	--	--	75.3	77.9	68.3	--	--
Barium	EPA 6010C	ug/l	2000		2000 HRL93	73	80	--	--	--	71	--
Beryllium	EPA 200.8	ug/l	4		0.08 HRL93	--	--	--	--	--	--	--
Cadmium	EPA 200.7	ug/l	5		0.5 HRL15 (1)	--	--	< 3.0 U	--	--	--	--
Cadmium	EPA 200.8	ug/l	5		0.5 HRL15 (1)	--	--	--	< 0.30 U	< 0.080 U	--	--
Cadmium	EPA 6010C	ug/l	5		0.5 HRL15 (1)	< 2.0 U	< 2.0 U	--	--	--	< 2.0 U	--
Calcium	EPA 200.8	ug/l				--	--	--	--	--	--	--
Chromium	EPA 200.7	ug/l	100		100 CR HRL93	--	--	< 10.0 U	< 10.0 U	< 10.0 U	--	--
Chromium	EPA 200.8	ug/l	100		100 CR HRL93	--	--	--	--	--	--	--
Chromium	EPA 6010C	ug/l	100		100 CR HRL93	13	< 5.0 U	--	--	--	< 5.0 U	--
Cobalt	EPA 200.8	ug/l				--	--	--	--	--	--	--
Copper	EPA 200.7	ug/l	1300 TT(12)	1000		--	--	84.9	13.9	18.4	--	--
Copper	EPA 200.8	ug/l	1300 TT(12)	1000		--	--	--	--	--	--	--
Copper	EPA 6010C	ug/l	1300 TT(12)	1000		15	12	--	--	--	< 10 U	--
Iron	EPA 200.8	ug/l		300		--	--	--	--	--	--	--
Lead	EPA 200.7	ug/l	15 TT(12)			--	--	< 10.0 U	--	--	--	--
Lead	EPA 200.8	ug/l	15 TT(12)			--	--	--	< 0.50 U	0.3	--	--
Lead	EPA 6010C	ug/l	15 TT(12)			10	< 10 U	--	--	--	< 10 U	--
Magnesium	EPA 200.8	ug/l				--	--	--	--	--	--	--
Manganese	EPA 200.8	ug/l		50	100 HBV20	--	--	--	--	--	--	--
Mercury	EPA 245.1	ug/l	2			--	--	< 0.20 U	--	--	--	--
Mercury	EPA 7470A	ug/l	2			< 0.20 U	< 0.20 U	--	< 0.10 U	< 0.20 U	< 0.20 U	--
Nickel	EPA 200.7	ug/l			100 HRL93	--	--	< 20.0 U	13.6	< 20.0 U	--	--
Nickel	EPA 200.8	ug/l			100 HRL93	--	--	--	--	--	--	--
Nickel	EPA 6010C	ug/l			100 HRL93	9.5	< 5.0 U	--	--	--	< 5.0 U	--

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2012-2022 Water Analytical Results
Bituminous Roadways, Inc.
Inver Grove Heights, MN

						Location Date	Epond 5/14/2012	Plan Well 5/16/2013	Plan Well 10/16/2015	Plan Well 6/18/2019	Plan Well 8/3/2021	Rainbow Well 5/21/2012
Parameter	Analytical Method	Units	EPA Maximum Contaminant Levels	EPA Secondary Drinking Water Standards	MDH Human Health- Based Water Guidance Table							
Last Updated			03/01/2018	03/01/2018	03/24/2022							
Exceedance Key			No Exceedances	Bold	No Exceedances							
Phenol	EPA 420.4	ug/l			4000 HRL93	--	--	< 10.0 U	--	--	--	--
Phenolics	EPA 420.1	ug/l				--	--	--	< 60.0 U	< 60.0 U	--	--
Phenolics	EPA 420.4	ug/l				< 10 U	< 10 U	--	--	--	< 10 U	--
Selenium	EPA 200.7	ug/l	50		30 HRL93	--	--	--	--	--	--	--
Selenium	EPA 200.8	ug/l	50		30 HRL93	--	--	--	--	--	--	--
Selenium	EPA 6010C	ug/l	50		30 HRL93	< 20 U	< 20 U	--	--	--	< 20 U	--
Silver	EPA 200.7	ug/l		100	30 HRL93	--	--	< 10.0 U	--	--	--	--
Silver	EPA 200.8	ug/l		100	30 HRL93	--	--	--	< 0.20 U	< 0.50 U	--	--
Silver	EPA 6010C	ug/l		100	30 HRL93	< 5.0 U	< 5.0 U	--	--	--	< 5.0 U	--
Sodium	EPA 200.8	ug/l				--	--	--	--	--	--	--
Thallium	EPA 200.8	ug/l	2		0.6 HRL94	--	--	--	--	--	--	--
Zinc	EPA 200.7	ug/l		5000	2000 HRL94	--	--	399	178	275	--	--
Zinc	EPA 200.8	ug/l		5000	2000 HRL94	--	--	--	--	--	--	--
Zinc	EPA 6010C	ug/l		5000	2000 HRL94	30	120	--	--	--	75	--
Total Petroleum Hydrocarbons												
Diesel Range Organics, C10-C28	WI DRO/WI DRO Modified	ug/l				580	< 100 U	< 130 U	< 100 U	< 100 U	220	--
Gasoline Range Organics, C6-C10	WI GRO/WI GRO Modified	ug/l				< 100 U	< 100 U	< 100 U	< 100 U	< 100 U	< 100 U	--

Table 1
2012-2022 Water Analytical Results
Bituminous Roadways, Inc.
Inver Grove Heights, MN

Parameter	Analytical Method	Units	EPA Maximum Contaminant Levels	EPA Secondary Drinking Water Standards	MDH Human Health-Based Water Guidance Table	Location	Rainbow Well	Rainbow Well	Rainbow Well	Rainbow Well	Rainbow Well	Stormwater Pond
						Date	6/20/2014	10/5/2016	7/16/2018	6/1/2020	5/17/2022	10/5/2016
Last Updated			03/01/2018	03/01/2018	03/24/2022							
Exceedance Key			No Exceedances	Bold	No Exceedances							
Alkalinity, total, as CaCO3	SM 2320B	ug/l					260000	251000	269000	258000	260000	66600
pH	SM 4500-H+B	pH units		6.5 - 8.5			7.09 H	7.7 H	7.9 H	7.8 H	7.8 H	8.0 H
Solids, total suspended	USGS-I-3765-85	ug/l					--	--	--	--	--	52000
Specific conductance @ 25 °C	SM 2510 B	umhos/cm					--	628	--	642	642	213
Specific conductance @ 25 °C	EPA 120.1	umhos/cm					620	--	632 H	--	--	--
Total Metals												
Aluminum	EPA 200.8	ug/l		50 (1)			--	--	--	--	--	--
Antimony	EPA 200.8	ug/l	6		6 HRL93		--	--	--	--	--	--
Arsenic	EPA 200.7	ug/l	10				< 20 U	< 25.0 U	--	--	--	< 25.0 U
Arsenic	EPA 200.8	ug/l	10				--	--	< 1.0 U	1.5	0.79	--
Arsenic	EPA 6010C	ug/l	10				--	--	--	--	--	--
Barium	EPA 200.7	ug/l	2000		2000 HRL93		64	61.5	68.6	69.2	65.8	52.8
Barium	EPA 6010C	ug/l	2000		2000 HRL93		--	--	--	--	--	--
Beryllium	EPA 200.8	ug/l	4		0.08 HRL93		--	--	--	--	--	--
Cadmium	EPA 200.7	ug/l	5		0.5 HRL15 (1)		< 2.0 U	< 20.0 U	--	--	--	< 20.0 U
Cadmium	EPA 200.8	ug/l	5		0.5 HRL15 (1)		--	--	< 0.20 U	< 0.20 U	< 0.080 U	--
Cadmium	EPA 6010C	ug/l	5		0.5 HRL15 (1)		--	--	--	--	--	--
Calcium	EPA 200.8	ug/l					--	--	--	--	--	--
Chromium	EPA 200.7	ug/l	100		100 CR HRL93		< 5.0 U	< 10.0 U	< 10.0 U	< 10.0 U	< 10.0 U	< 10.0 U
Chromium	EPA 200.8	ug/l	100		100 CR HRL93		--	--	--	--	--	--
Chromium	EPA 6010C	ug/l	100		100 CR HRL93		--	--	--	--	--	--
Cobalt	EPA 200.8	ug/l					--	--	--	--	--	--
Copper	EPA 200.7	ug/l	1300 TT(12)	1000			< 10 U	< 10.0 U	96.8	26.6	15.3	< 10.0 U
Copper	EPA 200.8	ug/l	1300 TT(12)	1000			--	--	--	--	--	--
Copper	EPA 6010C	ug/l	1300 TT(12)	1000			--	--	--	--	--	--
Iron	EPA 200.8	ug/l		300			--	--	--	--	--	--
Lead	EPA 200.7	ug/l	15 TT(12)				< 10 U	< 20.0 U	--	--	--	< 20.0 U
Lead	EPA 200.8	ug/l	15 TT(12)				--	--	13.8	1.5	< 0.50 U	--
Lead	EPA 6010C	ug/l	15 TT(12)				--	--	--	--	--	--
Magnesium	EPA 200.8	ug/l					--	--	--	--	--	--
Manganese	EPA 200.8	ug/l		50	100 HBV20		--	--	--	--	--	--
Mercury	EPA 245.1	ug/l	2				< 0.20 U	--	< 0.11 U	--	--	--
Mercury	EPA 7470A	ug/l	2				--	--	--	< 0.10 U	< 0.20 U	--
Nickel	EPA 200.7	ug/l			100 HRL93		< 5.0 U	< 10.0 U	< 10.0 U	< 10.0 U	< 20.0 U	< 10.0 U
Nickel	EPA 200.8	ug/l			100 HRL93		--	--	--	--	--	--
Nickel	EPA 6010C	ug/l			100 HRL93		--	--	--	--	--	--

Table 1
2012-2022 Water Analytical Results
Bituminous Roadways, Inc.
Inver Grove Heights, MN

Location Date						Rainbow Well 6/20/2014	Rainbow Well 10/5/2016	Rainbow Well 7/16/2018	Rainbow Well 6/1/2020	Rainbow Well 5/17/2022	Stormwater Pond 10/5/2016
Parameter	Analytical Method	Units	EPA Maximum Contaminant Levels	EPA Secondary Drinking Water Standards	MDH Human Health- Based Water Guidance Table						
Last Updated			03/01/2018	03/01/2018	03/24/2022						
Exceedance Key			No Exceedances	Bold	No Exceedances						
Phenol	EPA 420.4	ug/l			4000 HRL93	--	< 10.0 U	--	--	--	< 10.0 U
Phenolics	EPA 420.1	ug/l				--	--	< 60.0 U	< 60.0 U	< 60.0 U	--
Phenolics	EPA 420.4	ug/l				< 10 U	--	--	--	--	--
Selenium	EPA 200.7	ug/l	50		30 HRL93	< 20 U	--	--	--	--	--
Selenium	EPA 200.8	ug/l	50		30 HRL93	--	--	--	--	--	--
Selenium	EPA 6010C	ug/l	50		30 HRL93	--	--	--	--	--	--
Silver	EPA 200.7	ug/l		100	30 HRL93	< 5.0 U	< 10.0 U	--	--	--	< 10.0 U
Silver	EPA 200.8	ug/l		100	30 HRL93	--	--	< 0.20 U	< 0.20 U	< 0.50 U	--
Silver	EPA 6010C	ug/l		100	30 HRL93	--	--	--	--	--	--
Sodium	EPA 200.8	ug/l				--	--	--	--	--	--
Thallium	EPA 200.8	ug/l	2		0.6 HRL94	--	--	--	--	--	--
Zinc	EPA 200.7	ug/l		5000	2000 HRL94	180	132	730	994	336	< 20.0 U
Zinc	EPA 200.8	ug/l		5000	2000 HRL94	--	--	--	--	--	--
Zinc	EPA 6010C	ug/l		5000	2000 HRL94	--	--	--	--	--	--
Total Petroleum Hydrocarbons											
Diesel Range Organics, C10-C28	WI DRO/WI DRO Modified	ug/l				< 100 U	< 110 U	< 120 U	< 94 U	< 100 UH	330
Gasoline Range Organics, C6-C10	WI GRO/WI GRO Modified	ug/l				< 100 UJ-	< 100 UJ-	< 100 UJ-	< 100 U	< 100 UH	< 100 UJ-

Table 1
2012-2022 Water Analytical Results
Bituminous Roadways, Inc.
Inver Grove Heights, MN

Parameter	Analytical Method	Units	EPA Maximum Contaminant Levels	EPA Secondary Drinking Water Standards	MDH Human Health-Based Water Guidance Table	Location	Stormwater Pond	Stormwater Pond	Stormwater Pond	Wash Plant Pond	Wash Plant Pond	Wash Plant Pond
						Date	10/23/2017	6/18/2019	8/3/2021	6/20/2014	7/16/2018	6/1/2020
Last Updated			03/01/2018	03/01/2018	03/24/2022							
Exceedance Key			No Exceedances	Bold	No Exceedances							
Alkalinity, total, as CaCO3	SM 2320B	ug/l					92900	66000	56200	88000	105000	124000
pH	SM 4500-H+B	pH units		6.5 - 8.5			8.1 H	8.3 H	10.0 H	7.73 H	8.6 H	8.5 H
Solids, total suspended	USGS-I-3765-85	ug/l					--	--	--	--	--	--
Specific conductance @ 25 °C	SM 2510 B	umhos/cm					205	271	166	--	--	315
Specific conductance @ 25 °C	EPA 120.1	umhos/cm					--	--	--	190	273 H	--
Total Metals												
Aluminum	EPA 200.8	ug/l		50 (1)			--	--	--	--	--	--
Antimony	EPA 200.8	ug/l	6		6 HRL93		--	--	--	--	--	--
Arsenic	EPA 200.7	ug/l	10				< 50.0 U	--	--	< 20 U	--	--
Arsenic	EPA 200.8	ug/l	10				--	< 1.5 U	5.9	--	< 1.0 U	< 1.0 U
Arsenic	EPA 6010C	ug/l	10				--	--	--	--	--	--
Barium	EPA 200.7	ug/l	2000		2000 HRL93		49.2	27.2	25.2	33	30.4	35
Barium	EPA 6010C	ug/l	2000		2000 HRL93		--	--	--	--	--	--
Beryllium	EPA 200.8	ug/l	4		0.08 HRL93		--	--	--	--	--	--
Cadmium	EPA 200.7	ug/l	5		0.5 HRL15 (1)		< 20.0 U	--	--	< 2.0 U	--	--
Cadmium	EPA 200.8	ug/l	5		0.5 HRL15 (1)		--	< 0.30 U	< 0.080 U	--	< 0.20 U	< 0.20 U
Cadmium	EPA 6010C	ug/l	5		0.5 HRL15 (1)		--	--	--	--	--	--
Calcium	EPA 200.8	ug/l					--	--	--	--	--	--
Chromium	EPA 200.7	ug/l	100		100 CR HRL93		< 10.0 U	< 10.0 U	< 10.0 U	< 5.0 U	< 10.0 U	< 10.0 U
Chromium	EPA 200.8	ug/l	100		100 CR HRL93		--	--	--	--	--	--
Chromium	EPA 6010C	ug/l	100		100 CR HRL93		--	--	--	--	--	--
Cobalt	EPA 200.8	ug/l					--	--	--	--	--	--
Copper	EPA 200.7	ug/l	1300 TT(12)	1000			< 10.0 U	< 10.0 U	< 10.0 U	< 10 U	< 10.0 U	< 10.0 U
Copper	EPA 200.8	ug/l	1300 TT(12)	1000			--	--	--	--	--	--
Copper	EPA 6010C	ug/l	1300 TT(12)	1000			--	--	--	--	--	--
Iron	EPA 200.8	ug/l		300			--	--	--	--	--	--
Lead	EPA 200.7	ug/l	15 TT(12)				< 20.0 U	--	--	< 10 U	--	--
Lead	EPA 200.8	ug/l	15 TT(12)				--	< 0.50 U	0.25	--	0.67	< 0.50 U
Lead	EPA 6010C	ug/l	15 TT(12)				--	--	--	--	--	--
Magnesium	EPA 200.8	ug/l					--	--	--	--	--	--
Manganese	EPA 200.8	ug/l		50	100 HBV20		--	--	--	--	--	--
Mercury	EPA 245.1	ug/l	2				< 0.20 U	--	--	< 0.20 U	< 0.11 U	--
Mercury	EPA 7470A	ug/l	2				--	< 0.10 U	< 0.20 U	--	--	< 0.10 U
Nickel	EPA 200.7	ug/l			100 HRL93		< 10.0 U	< 10.0 U	< 20.0 U	< 5.0 U	< 10.0 U	< 10.0 U
Nickel	EPA 200.8	ug/l			100 HRL93		--	--	--	--	--	--
Nickel	EPA 6010C	ug/l			100 HRL93		--	--	--	--	--	--

Table 1
2012-2022 Water Analytical Results
Bituminous Roadways, Inc.
Inver Grove Heights, MN

						Stormwater Pond 10/23/2017	Stormwater Pond 6/18/2019	Stormwater Pond 8/3/2021	Wash Plant Pond 6/20/2014	Wash Plant Pond 7/16/2018	Wash Plant Pond 6/1/2020
Parameter	Analytical Method	Units	EPA Maximum Contaminant Levels	EPA Secondary Drinking Water Standards	MDH Human Health- Based Water Guidance Table						
Last Updated			03/01/2018	03/01/2018	03/24/2022						
Exceedance Key			No Exceedances	Bold	No Exceedances						
Phenol	EPA 420.4	ug/l			4000 HRL93	--	--	--	--	--	--
Phenolics	EPA 420.1	ug/l				< 60.0 U	< 60.0 U	< 60.0 U	--	< 60.0 U	< 60.0 U
Phenolics	EPA 420.4	ug/l				--	--	--	< 10 U	--	--
Selenium	EPA 200.7	ug/l	50		30 HRL93	--	--	--	< 20 U	--	--
Selenium	EPA 200.8	ug/l	50		30 HRL93	--	--	--	--	--	--
Selenium	EPA 6010C	ug/l	50		30 HRL93	--	--	--	--	--	--
Silver	EPA 200.7	ug/l		100	30 HRL93	< 10.0 U	--	--	< 5.0 U	--	--
Silver	EPA 200.8	ug/l		100	30 HRL93	--	< 0.20 U	< 0.50 U	--	< 0.20 U	< 0.20 U
Silver	EPA 6010C	ug/l		100	30 HRL93	--	--	--	--	--	--
Sodium	EPA 200.8	ug/l				--	--	--	--	--	--
Thallium	EPA 200.8	ug/l	2		0.6 HRL94	--	--	--	--	--	--
Zinc	EPA 200.7	ug/l		5000	2000 HRL94	< 20.0 U	< 20.0 U	< 20.0 U	< 20 U	< 20.0 U	< 20.0 U
Zinc	EPA 200.8	ug/l		5000	2000 HRL94	--	--	--	--	--	--
Zinc	EPA 6010C	ug/l		5000	2000 HRL94	--	--	--	--	--	--
Total Petroleum Hydrocarbons											
Diesel Range Organics, C10-C28	WI DRO/WI DRO Modified	ug/l				180	630	260	500	320	98
Gasoline Range Organics, C6-C10	WI GRO/WI GRO Modified	ug/l				< 50.0 UJ-	< 100 UJ-	< 100 U	< 100 U	< 100 UJ-	< 100 U

Table 1
2012-2022 Water Analytical Results
Bituminous Roadways, Inc.
Inver Grove Heights, MN

Parameter	Analytical Method	Units	EPA Maximum Contaminant Levels	EPA Secondary Drinking Water Standards	MDH Human Health-Based Water Guidance Table	Location	Wash Plant	Wicker	Wicker	Wicker	Wicker	Wpond
						Date	Pond	Well (Well ID 435227)	Well (Well ID 435227)	Well (Well ID 435227)	Well (Well ID 847817)	
						5/17/2022	5/16/2013	10/16/2015	6/18/2019	8/3/2021	5/14/2012	
Last Updated			03/01/2018	03/01/2018	03/24/2022							
Exceedance Key			No Exceedances	Bold	No Exceedances							
Alkalinity, total, as CaCO3	SM 2320B	ug/l				168000	270000	275000	276000	260000	60000	
pH	SM 4500-H+B	pH units		6.5 - 8.5		8.3 H	7.81 H	7.8 H	7.8 H	8.2 H	8.29 H	
Solids, total suspended	USGS-I-3765-85	ug/l				--	--	--	--	--	--	
Specific conductance @ 25 °C	SM 2510 B	umhos/cm				390	--	--	676	626	--	
Specific conductance @ 25 °C	EPA 120.1	umhos/cm				--	640	644	--	--	120	
Total Metals												
Aluminum	EPA 200.8	ug/l		50 (1)		--	--	--	64.6	--	--	
Antimony	EPA 200.8	ug/l	6		6 HRL93	--	--	--	< 0.50 U	--	--	
Arsenic	EPA 200.7	ug/l	10			--	--	< 20.0 U	--	--	--	
Arsenic	EPA 200.8	ug/l	10			0.68	--	--	< 1.5 U	1.2	--	
Arsenic	EPA 6010C	ug/l	10			--	< 20 U	--	--	--	< 20 U	
Barium	EPA 200.7	ug/l	2000		2000 HRL93	47.4	--	< 10.0 U	< 10.0 U	< 10.0 U	--	
Barium	EPA 6010C	ug/l	2000		2000 HRL93	--	< 10 U	--	--	--	130	
Beryllium	EPA 200.8	ug/l	4		0.08 HRL93	--	--	--	< 0.20 U	--	--	
Cadmium	EPA 200.7	ug/l	5		0.5 HRL15 (1)	--	--	< 3.0 U	--	--	--	
Cadmium	EPA 200.8	ug/l	5		0.5 HRL15 (1)	< 0.080 U	--	--	< 0.30 U	< 0.080 U	--	
Cadmium	EPA 6010C	ug/l	5		0.5 HRL15 (1)	--	< 2.0 U	--	--	--	< 2.0 U	
Calcium	EPA 200.8	ug/l				--	--	--	223	--	--	
Chromium	EPA 200.7	ug/l	100		100 CR HRL93	< 10.0 U	--	< 10.0 U	< 10.0 U	< 10.0 U	--	
Chromium	EPA 200.8	ug/l	100		100 CR HRL93	--	--	--	< 1.5 U	--	--	
Chromium	EPA 6010C	ug/l	100		100 CR HRL93	--	< 5.0 U	--	--	--	33	
Cobalt	EPA 200.8	ug/l				--	--	--	< 0.20 U	--	--	
Copper	EPA 200.7	ug/l	1300 TT(12)	1000		< 10.0 U	--	31.5	226	< 10.0 U	--	
Copper	EPA 200.8	ug/l	1300 TT(12)	1000		--	--	--	225	--	--	
Copper	EPA 6010C	ug/l	1300 TT(12)	1000		--	< 10 U	--	--	--	22	
Iron	EPA 200.8	ug/l		300		--	--	--	313	--	--	
Lead	EPA 200.7	ug/l	15 TT(12)			--	--	< 10.0 U	--	--	--	
Lead	EPA 200.8	ug/l	15 TT(12)			< 0.50 U	--	--	3	0.13	--	
Lead	EPA 6010C	ug/l	15 TT(12)			--	< 10 U	--	--	--	12	
Magnesium	EPA 200.8	ug/l				--	--	--	109	--	--	
Manganese	EPA 200.8	ug/l		50	100 HBV20	--	--	--	2.6	--	--	
Mercury	EPA 245.1	ug/l	2			--	--	< 0.20 U	--	--	--	
Mercury	EPA 7470A	ug/l	2			< 0.20 U	< 0.20 U	--	< 0.10 U	< 0.20 U	< 0.20 U	
Nickel	EPA 200.7	ug/l			100 HRL93	< 20.0 U	--	< 20.0 U	< 10.0 U	< 20.0 U	--	
Nickel	EPA 200.8	ug/l			100 HRL93	--	--	--	0.88	--	--	
Nickel	EPA 6010C	ug/l			100 HRL93	--	< 5.0 U	--	--	--	19	

Table 1
2012-2022 Water Analytical Results
Bituminous Roadways, Inc.
Inver Grove Heights, MN

						Location Date	Wash Plant Pond 5/17/2022	Wicker Well (Well ID 435227) 5/16/2013	Wicker Well (Well ID 435227) 10/16/2015	Wicker Well (Well ID 435227) 6/18/2019	Wicker Well (Well ID 847817) 8/3/2021	Wpond 5/14/2012
Parameter	Analytical Method	Units	EPA Maximum Contaminant Levels	EPA Secondary Drinking Water Standards	MDH Human Health- Based Water Guidance Table							
Last Updated			03/01/2018	03/01/2018	03/24/2022							
Exceedance Key			No Exceedances	Bold	No Exceedances							
Phenol	EPA 420.4	ug/l			4000 HRL93	--	--	< 10.0 U	--	--	--	--
Phenolics	EPA 420.1	ug/l				< 60.0 U	--	--	< 60.0 U	< 60.0 U	--	--
Phenolics	EPA 420.4	ug/l				--	11	--	--	--	< 10 U	--
Selenium	EPA 200.7	ug/l	50		30 HRL93	--	--	--	--	--	--	--
Selenium	EPA 200.8	ug/l	50		30 HRL93	--	--	--	< 1.0 U	--	--	--
Selenium	EPA 6010C	ug/l	50		30 HRL93	--	< 20 U	--	--	--	< 20 U	--
Silver	EPA 200.7	ug/l		100	30 HRL93	--	--	< 10.0 U	--	--	--	--
Silver	EPA 200.8	ug/l		100	30 HRL93	< 0.50 U	--	--	< 0.20 U	< 0.50 U	--	--
Silver	EPA 6010C	ug/l		100	30 HRL93	--	< 5.0 U	--	--	--	< 5.0 U	--
Sodium	EPA 200.8	ug/l				--	--	--	169000	--	--	--
Thallium	EPA 200.8	ug/l	2		0.6 HRL94	--	--	--	< 0.020 U	--	--	--
Zinc	EPA 200.7	ug/l		5000	2000 HRL94	< 20.0 U	--	238	416	< 20.0 U	--	--
Zinc	EPA 200.8	ug/l		5000	2000 HRL94	--	--	--	377	--	--	--
Zinc	EPA 6010C	ug/l		5000	2000 HRL94	--	43	--	--	--	--	40
Total Petroleum Hydrocarbons												
Diesel Range Organics, C10-C28	WI DRO/WI DRO Modified	ug/l				140 H	< 100 U	< 120 U	< 100 U	< 100 U	120	
Gasoline Range Organics, C6-C10	WI GRO/WI GRO Modified	ug/l				< 100 UH	< 100 UJ-	< 100 U	< 100 UJ-	< 100 U	< 100 U	

Data Footnotes and Qualifiers

Barr Standard Footnotes and Qualifiers

--	Not analyzed/Not available.
H	Recommended sample preservation, extraction or analysis holding time was exceeded.
U	The analyte was analyzed for, but was not detected.
J-	The result is an estimated quantity and may be biased low.

EPA Maximum Contaminant Levels

(12)	Copper action level 1.3 mg/l; lead action level 0.015 mg/l.
TT	Treatment technique.

EPA Secondary Drinking Water Standards

(1)	The guidance provides a range for Aluminum as 0.05 to 0.2 mg/l.
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MDH Human Health-Based Water Guidance Table

(1)	Value is representative of the lowest exposure duration published in the Minnesota Department of Health Human Health Advisory Table.
CR	Value represents the criteria for Chromium, hexavalent
HBV20	Health Based Value 2020.
HRL15	Health Risk Limit 2015.
HRL93	Health Risk Limit 1993.
HRL94	Health Risk Limit 1994.

To: Ally Sutherland and Allan Hunting
From: Ray Wuolo, P.E., P.G., Samantha Schirmer, and Jeff Ubl, P.E.
Subject: Bituminous Roadways, Inc. (BRI) – Environmental Review of Proposed Expansion
Date: February 28, 2023
Page: 23

Figures

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Subject: Bituminous Roadways, Inc. (BRI) – Environmental Review of Proposed Expansion
Date: February 28, 2023
Page: 24



Figure 1 Photograph of possible wet soil provided by Planning Commission

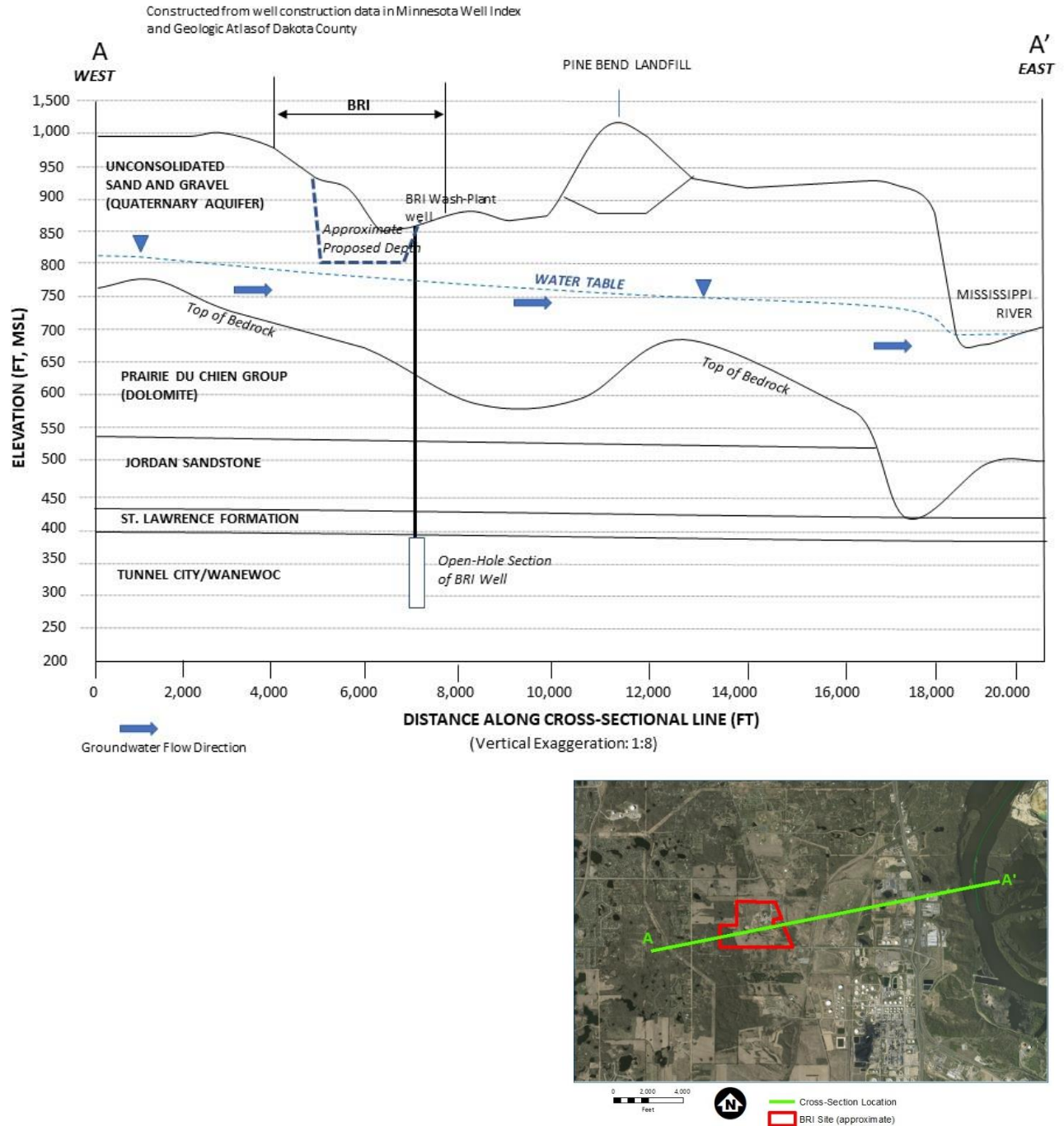
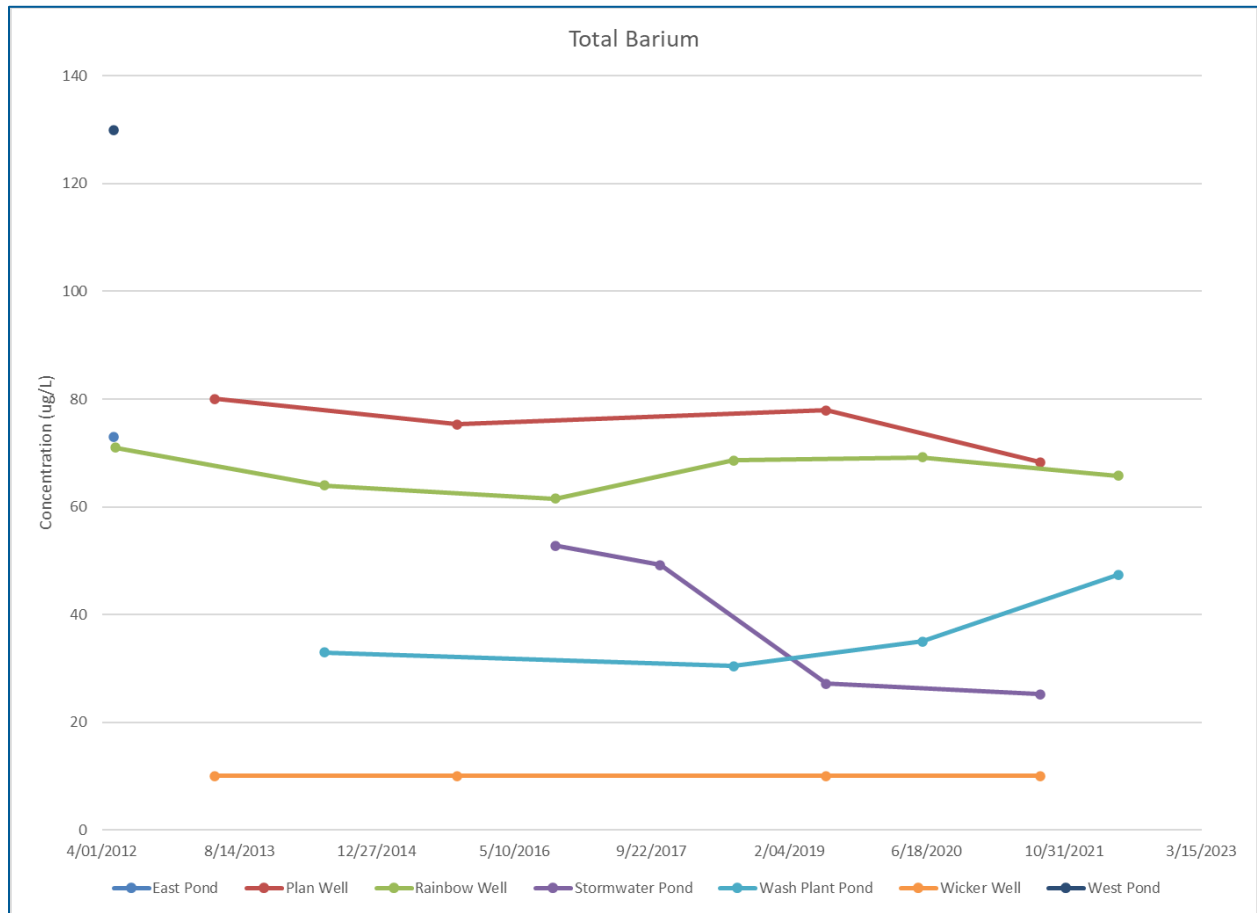
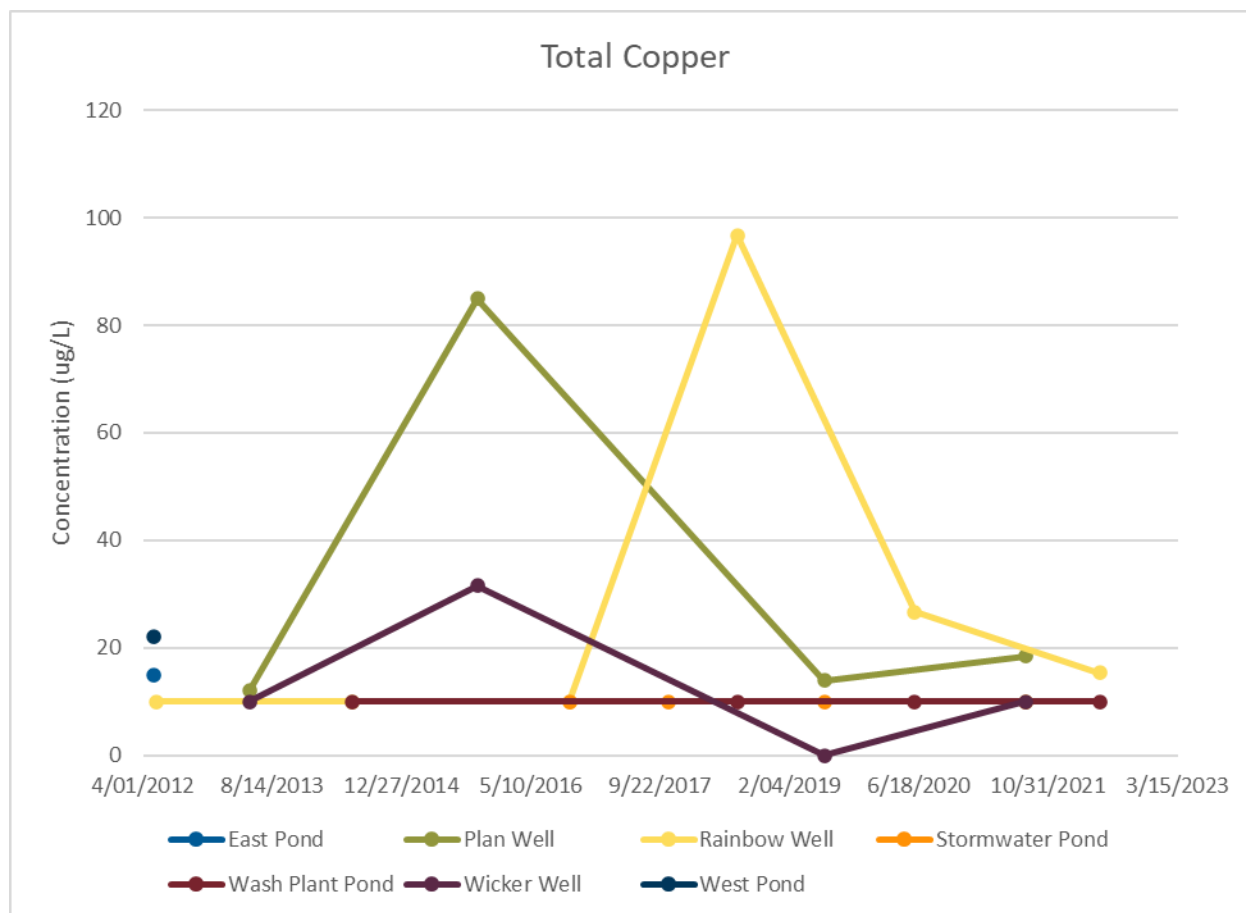


Figure 2 West-to-East Geologic Cross Section Along Groundwater Flow Path Through BRI Facility



Note: EPA Maximum Contaminant Level (MCL) for Barium is 2,000 ug/L

Figure 3 Time-Series Plot of Barium Concentrations



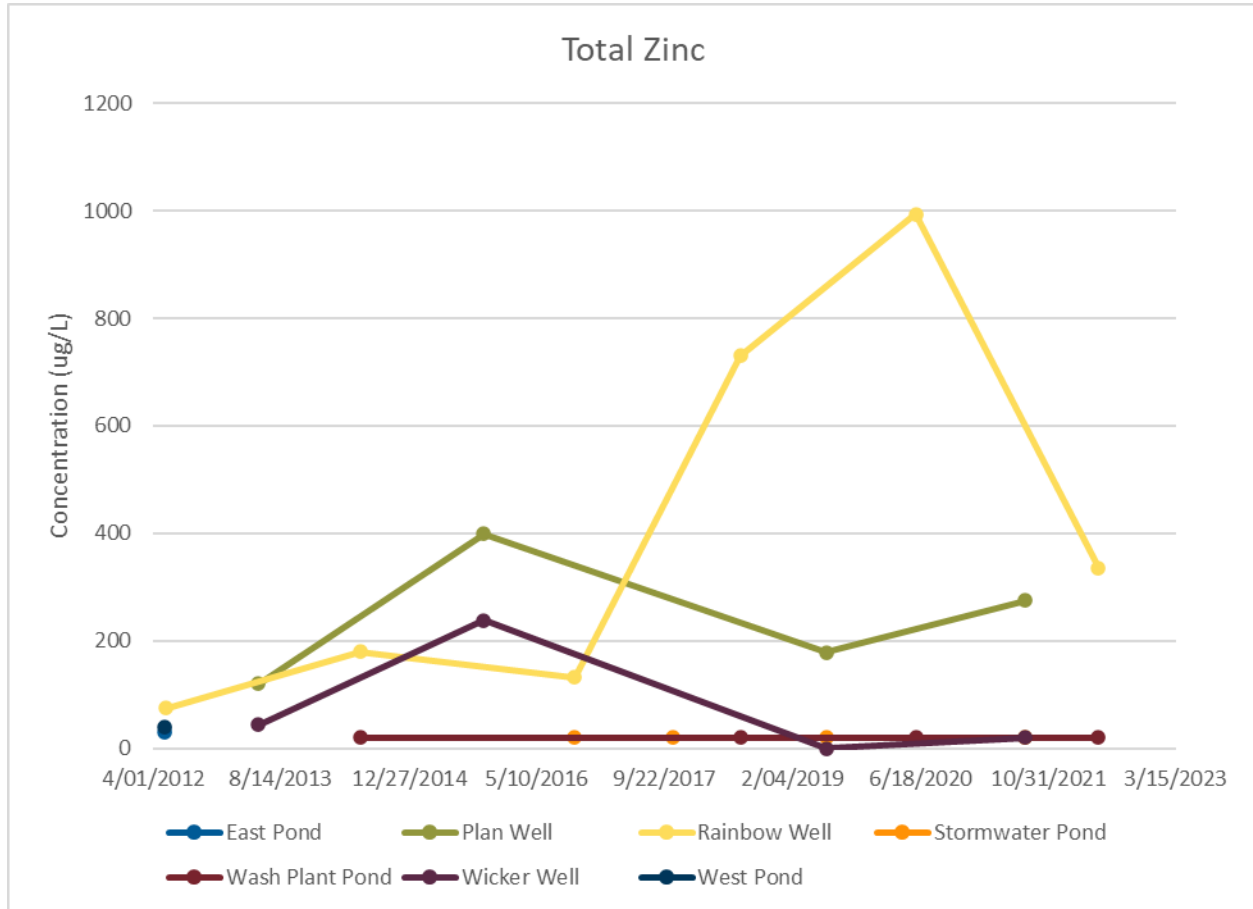
Note: EPA Maximum Contaminant Level (MCL) for Copper is 1,300 ug/L

Figure 4 Time-Series Plot of Copper Concentrations



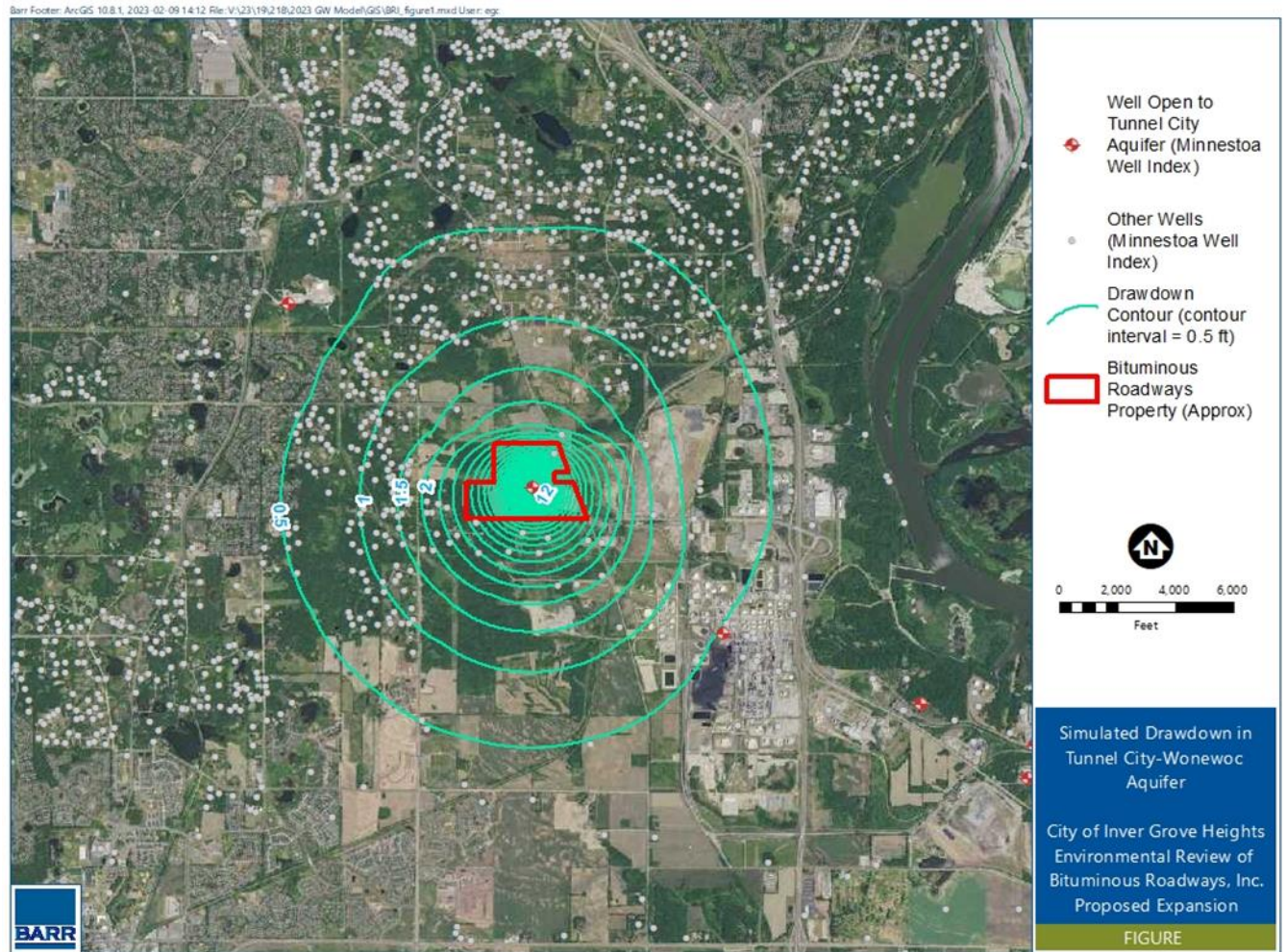
Note: EPA Maximum Contaminant Level (MCL) for Lead is 15 ug/L. In 2016 and 2017, the laboratory quantification limits were higher than the MCLs for the stormwater pond and Rainbow well – but this does not mean that concentrations in water exceeded the MCL.

Figure 5 Time-Series Plot of Lead Concentrations



Note: EPA Secondary Drinking Water Standard for Zinc is 5,000 ug/L. (for taste and odor). There is no MCL for Zinc.

Figure 6 Time-Series Plot of Zinc Concentrations



Simulation using Metro Model 3 (Metropolitan Council). Grid-mesh refinement to 15.625 m x 15.625 m in vicinity of pumping well.

Figure 7 Model Simulation of Steady-State Drawdown (feet) in the Tunnel City-Wonewoc Aquifer Resulting from Pumping of BRI Wash-Plant Well at Average Pumping Rates

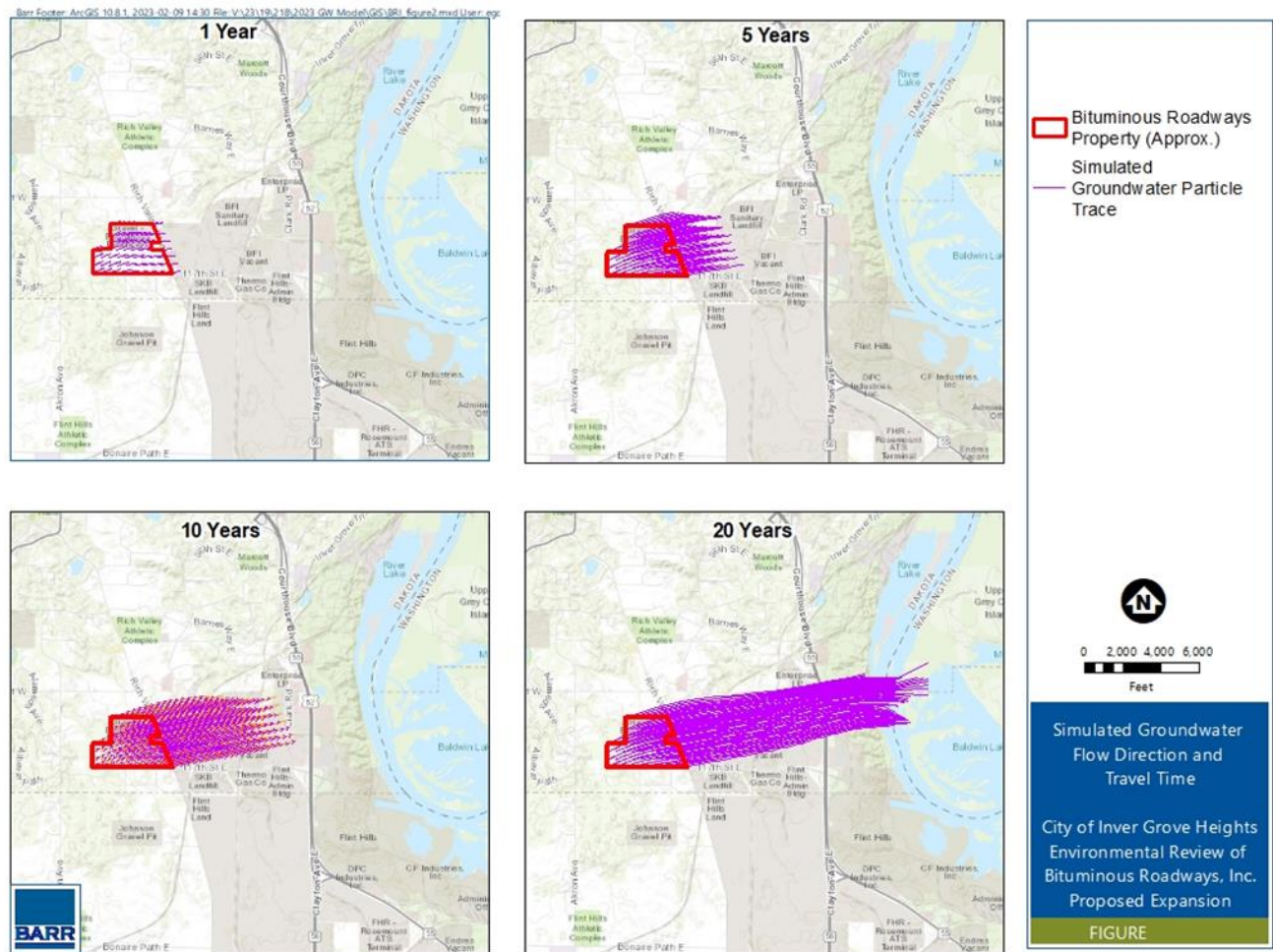
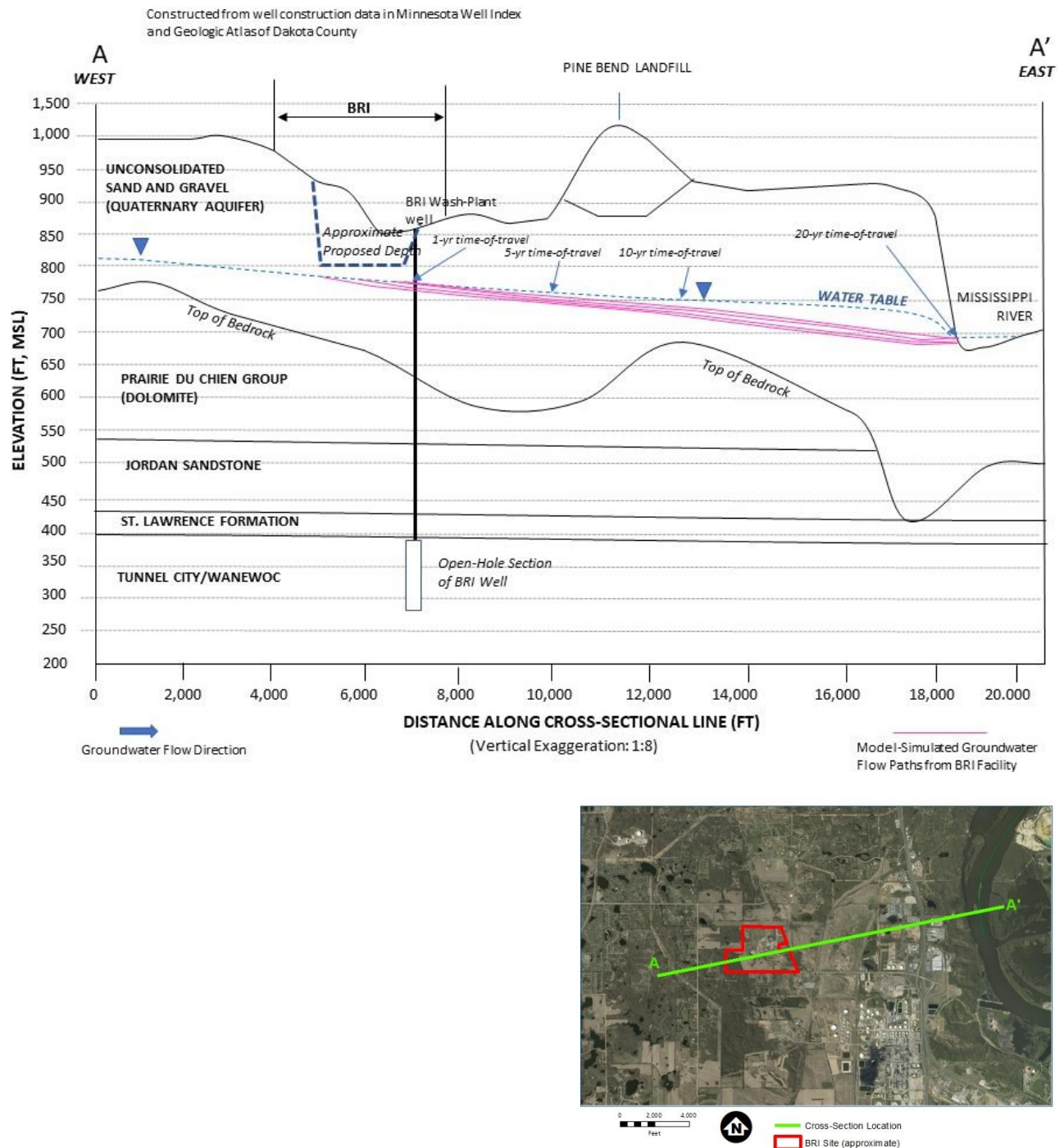


Figure 8 Model Simulation of Groundwater Time-of-Travel in the Water-Table Aquifer from BRI Facility Using Metro Model 3



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MEMORANDUM

To: Allan Hunting, City Planner
City of Inver Grove Heights

Date: 3/27/2023

From: Michaellea Whelan, Sunde Engineering, PLLC
Kent Peterson, Bituminous Roadways, Inc.

Subject: Bituminous Roadways 2022 CUP Application
Response to Planning Commission Document

CC:

This memorandum is provided in response to the Planning Commission comments from the document titled "Bituminous Roadway and its Environmental Impact" by Inver Grove Heights Planning Commissioner Robert Heidenreich received via. email on February 10, 2023 (PC Comments). Previous Planning Commission questions and comments from the November 1st Planning Commission meeting and subsequent emailed questions and comments have been responded to in two separate memorandums submitted to Allan Hunting, City Planner, dated 11/18/2022 and 12/21/2022.

Introduction:

Bituminous Roadways, Inc. (BRI) has applied for the five year renewal of their CUP and sand and gravel ordinance at their sand and gravel mine located at 11201 Rich Valley Boulevard in Inver Grove Heights, MN (Site). During the initial Planning Commission meeting on November 1, 2022 Commissioners had questions and comments that requested additional information to be provided by BRI and the City's consulting engineering firm, Barr Engineering.

The Site has been actively mined since 1963 and the asphalt production facility has been permitted since 1980. BRI has always complied with all permit regulations associated with the mine Site, the asphalt plant, and associated mining activities. BRI operates in good standing with all active permit authorities including the MPCA, the MNDNR, Dakota County and the City. No violations have been issued by any permitting authority to date. Any issues that may have come up have been responded to and resolved as quickly as possible.

BRI is proposing to lower the mining depth by 40 feet to an elevation of approximately 800 feet above mean sea level (MSL) in the remaining phases of the Site. The areas that have previously been mined and reclaimed will remain as they are today. The current floor of the mine Site where the wash plant and high capacity well is located is at about elevation 850 feet MSL (high capacity well No. 780331 well log is labeled with an incorrect land elevation). The groundwater flow across the Site flows from west to east and is approximately at elevation 790 feet MSL at the Site. Barr Engineering has provided a cross-section view of

the mine Site showing the 800 feet MSL proposed mine floor elevation in relation to the water table in Figure 9 of their Technical Memorandum – Bituminous Roadways, Inc. (BRI) – Environmental Review of Proposed Expansion, dated February 28, 2023 (Barr’s Environmental Review). This figure shows approximately 8-15 feet of separation between the proposed mine floor and the water table. Barr’s Environmental Review also explains that water infiltrating at the Site is not moving downward and into bedrock aquifers, but eastward underneath Pine Bend Landfill and toward the Mississippi River. Also, that the lowering of the mine floor to 800 feet MSL will not have an impact on the groundwater flow rate or direction.

This increase in mining depth will provide a more efficient use of this resource which is vital to meet the ongoing demand for construction aggregate in the surrounding area. The material will be available for use in important public infrastructure projects, road improvement projects, schools, housing and other building construction needs. Sand and gravel for construction industry is a vital resource for the City of Inver Grove Heights and the state of Minnesota.

Response to Planning Commission Comments:

The following is BRI’s response to each topic from the PC Comments document. The original, unedited statements from the PC Comments are re-stated at the start of each section below in italics followed by BRI’s response.

Topic #1: Foundry Sands

A stockpile of approximately 30,000 cubic yards of foundry sand imported from the Prospect Foundry and Smith Foundry is located at the Bituminous Roadways aggregate mining and processing facility in the City of Inver Grove Heights (Figure 1). The stockpile was placed at the location in approximately 1987. The intention was to use the material as an aggregate substitute, thereby minimizing the use of virgin sands from their aggregate resource pit.

Why is Foundry Sand concerning? The contaminants of concern in foundry sand vary depending upon the processes that are used at the foundry. Potential contaminants of concern in foundry sand typically include heavy metals and phenols. The processes that can influence the characteristics of the foundry sand are the type of metal being poured (iron, steel, aluminum, brass/bronze), the type of casting process (sand casting, investment casting), the type of furnace (induction, electric arc, cupola) and the type of finishing process (grinding, blast, cleaning, coating). The foundry sand at the Bituminous Roadway Site came from two Minneapolis foundries (Smith and Prospect Foundries). These two foundries both pour iron, use sand casting, have electric induction furnaces, and perform finish grading. Published information was not researched regarding the expected characteristics of foundry sands from foundries such as these because direct measurements can be obtained through testing of the foundry sand at the Site.

Location of Foundry Sand on Site.

A stockpile of approximately 30,000 cubic yards of foundry sand was imported from the Prospect Foundry and Smith Foundry. The Foundry sands are located in three known locations. Northwest Berm, Southeast Berm, West property line boundary edge stockpile.

See Exhibit #1

Disposition of Foundry sand on-Site.

Several explanations have been provided as to the amount and location of the foundry sand on the BR property, the reports provided at the 2022 CUP renewal claim the sand is only in the southeast berm. Case number 22-37ZC; pages 5 & 6; lines 12 -14, indicates that the foundry sands have remained undisturbed and claim all conditions have been satisfied. The aerial and satellite images in Exhibit #2 will show a different conclusion. The west and largest stockpile had not been disturbed since 1998 until approximately 2020-2022. Between these years, aerial images appear to show major regrading and the relocation of this foundry sand. Sand and stormwater test results also show increasing contamination levels of DROs and phenols typically related to Foundry Sands. See Exhibit #3 for Test Results.

Bituminous Roadways' Response to Topic #1: As documented in the June 19th, 2007 planning report, Barr Engineering conducted a Site visit in May of that year and determined the northwest foundry sand berm was completely gone and vegetation had been established. This was, by far, the bulk of the foundry sand that had been placed on Site. The southeast foundry sand berm, which only contained approximately 24 cubic yards of foundry sand, has been left undisturbed and contained a vegetative cover since at least 1998. It was determined in 2007 that the condition regarding the removal of the foundry sand within the four year time period in the northwest berm had been satisfied. The foundry sand that was stated to be in the southeast berm is now considered to be in the eastern central area of the Site as the gravel pit has been expanded to the south with the purchase and permitting of the adjacent south property.

The aerial images show grading in the northwest area of the Site, because this area was being filled to final grade as shown on plan sheet C-1 of the 2017 permit renewal. Grading in this area was allowed after the 2007 permit renewal. The aerial images do not clearly show evidence of foundry sand stockpiles. There is a vegetated topsoil screening berm located along portions of the north property line. The removal of the 30,000 cubic yards of foundry sand is well documented.

The foundry sand that was on the Site had been thoroughly tested and analyzed by environmental and engineering companies (including Braun Intertec, Wenck and AET) for many years after it was brought to the Site originally in 1987. The results of the soil testing concluded that all of the concentrations measured were either non-detect or below the MPCA's Tier I Residential Soil Reference Values (SRVs) and Soil Leaching Values (SLVs) and that the material had not impacted surface waters or groundwater. Since the main 30,000 cubic yard foundry sand stockpile hasn't been present on the Site since at least 2007, it is not a valid concern that the material could impact the soil and/or groundwater quality at the Site or neighboring properties. BRI will continue to sample and monitor the groundwater as required in their current and future permits.

Topic #2: Well Water Testing

Well and pond water testing is a requirement of the Conditional Use Permit. A test schedule has been created and published, which is shown on Exhibit #4.

Of Major concern with the well water testing is the identity of the actual well being tested, for example, the map and surveys show locations for the Rainbow, Wicker, and Plan wells but don't include the unique well number identifier. See Exhibit #5 for the testing tables. The unique well ID number is important in that without it it's not clear what well is really being tested.

The Wicker Well is of major concern. The well-testing results show High levels of contamination of Arsenic, Sodium The source of these contaminants seems clear. What's not clear is why a new well was installed but not disclosed and why a testing plan adjustment was not made and remedial action was not initiated. This failure shows a clear lack of transparency.

The Water sample test data provided at the November 2nd planning meeting showed results where past well water test samples have consistently arrived with broken seals, missing samples, chain of custody broken, temperature, and hold times outside of expected values.

Bituminous Roadways' Response to Topic #2: The current/active wells at the on-site Rainbow building, the Wicker property and the Robert Plan property have been sampled and tested in accordance with the CUP. The original purpose of monitoring the downgradient residential wells was not as an early detection point, but rather to test the water quality of the drinking water supply itself. Todd Wicker and Robert Plan can verify the sampling has been done at their properties. Unique well numbers had not been used in identifying well samples in the past, but this step can be added to the sampling procedure. The sample collection is performed by a trained BRI employee. Each time a sample is collected the property owner is notified and the water sample is obtained directly from the exterior spigot on the house/building. Prior to collecting the sample the water is run out of the faucet for a period of approximately 5-10 minutes. The samples are then collected in the appropriate containers (provided by the testing lab which is usually Pace Analytical Services, LLC), capped (or sealed), and put in the cooler with ice. The cooler is directly delivered to the accepting lab where the chain of custody form is completed by BRI and the lab. The sample collection and the testing are done with the utmost care and attention to detail. Barr's Environmental Review provided their evaluation of the analytical results from sampling events from 2012-2022 and while some minor issues appear with the collecting and handling of the samples, it is noted that the analyses are generally acceptable and reliable. BRI is willing to follow the recommendations of Barr and the City regarding future and ongoing groundwater monitoring at the Site. Attached is a map of the area wells labeled with MN Unique well numbers and/or well sealing record numbers.

The current/active wells that are scheduled for future sampling and testing are the following:

Well Unique ID #	Well install date	Owner/common name	Address*	Approx. ground elev.(ft. above MSL)	Static Water level at time of well installation	Approximate groundwater elevation (ft. above MSL)
608018	03/17/1998	Bituminous Roadways/Rainbow	11201 RVB	890'	100'	790'
847817	04/07/2020	Wicker	11479 RVB	890'	100'	790'
207296	03/01/1958	R. Plan	11889 RVB	851'	60'	791'

*Rich Valley Boulevard (RVB)

BRI's closest neighbor Todd Wicker had a new well installed (ID #847817) on his property at 11479 Rich Valley Boulevard in April of 2020 and the old well was sealed (ID #435227, sealing ID #H347863). Wicker's replacement well was constructed about 60 feet deeper than the old well, but this doesn't change the purpose of testing the well. Wicker's replacement well will continue to be sampled and tested in accordance with the permit conditions to quantify the quality of their domestic drinking water supply.

Topic #3: Requirements as Listed in the Conditional Use Permit Documents

Planning Report - Case No. 22-37ZC Page 7

25. Monitoring of the east and west storm water ponds, both wash water ponds, and three wells shall be conducted every other year and shall be tested for the same elements as listed in condition #24 per the proposed testing schedule identified on the Water Testing Map. Disclosure and accurate descriptions of all well and test protocols.

Examples would be:

- *Rainbow Well*

There are actually several wells called the Rainbow well in the MDH well registry

Well # H118525; Sealed in 1998

Well# H153094; Sealed in 1998

- *Plan Well*

There are actually several wells called the Plan well in the MDH well registry

Well # 426388; Sealed in 2018 Larry Plan

Well# H307162; Sealed in 2013 Robert Plan

- *Wicker Well*

There are actually several wells called the Wicker well in the MDH well registry

Well # 847817; Drilled 4-7-2020

Well# 435227; Sealed in 4-15-2020

Bituminous Roadways' Response to Topic #3: BRI has complied with all well and surface water testing conditions as required in the CUP. BRI has submitted well test results to the City as required in the CUP on an annual basis. Some clarification of the well testing and active vs. sealed wells that are shown on either the MN Well Index and/or Dakota County GIS site is provided below.

Rainbow well

- Well No. H118525 (sealed on 5/29/1998) was the original well at the Rainbow building that was being replaced (originally installed in 1985). A new well was attempted to be installed and it appeared the install failed, i.e. well No. H153094 sealed on 3/6/1998 on the same day installation was attempted (based on data that appears on the Dakota County GIS website).
- Well No. 608018 is the active "Rainbow" well installed in March of 1998. This is the well that has been consistently sampled and tested as part of the BRI groundwater monitoring program.

Plan well

- Well No. 207296 is the Robert Plan well located at 11889 Rich Valley Blvd. This is the well that has been consistently sampled and tested for groundwater monitoring.
- Well No. 426388 (sealing record #H362539) is the Larry Plan well located at 11815 Rich Valley Blvd. and was sealed in 2018.
- Well No. H307162 is a sealed well located at 11771 Rich Valley Blvd. The property is currently owned by Flint Hills Resources and previously owned by M. Morzinski. This well was never part of BRI's testing procedure.

Wicker well

- Well No. 435227 is the Wicker well located at 11479 Rich Valley Blvd. The Wicker's had a new well installed (well No. 847817) in April of 2020 and the old well was sealed. Testing of the groundwater supply at the Wicker property is currently part of BRI's groundwater monitoring program.

Topic #4: Source of Well Water Pollutants

The source of the well water pollution appears to be directly related to the mining, and product storage on site. Arsenic is a naturally occurring metal found in the soil. Undisturbed it is stable, but exposure to oxygen and water can cause Redox Conditions. Arsenic can be released to (or removed from) the groundwater as a result of redox reactions. See https://pubs.usgs.gov/sir/2007/5036/pdf/sir20075036_web.pdf for the full report. The high levels of sodium in the test results at the Wicker site appear to be coming from the Salt storage facility north and

west of the Wicker well site. Report Exhibit #3 dated 6-18-2019 shows Sodium at 169000 ug/L the reportable limit is 2000 ug/L. This amount is 84 times the reportable limit. The well was sealed but no known remediation of the issue was disclosed. The lack of transparency on this only raises more questions about what is and isn't being shared with the Planning Commission and city staff

Bituminous Roadways' Response to Topic #4: The groundwater monitoring test results of the water supply wells tested to date show no evidence of concentrations exceeding the EPA's Maximum Contaminant Levels (MCL) or the MDH's Health Risk Limits (HRL), nor do the results show an increasing trend in concentrations over time as noted in Barr's Environmental Review. These results have been submitted to the City annually as required in the CUP.

Sodium chloride in groundwater generally comes from salts used for de-icing, water softeners and fertilizers, and is a naturally occurring element in the soil. There is no Federal or State established drinking water quality standard for sodium chloride. The US EPA has established a secondary maximum contaminate level (SMCL) guideline for chloride of 250 mg/l (250,000 ug/l) for aesthetic considerations. The concentration of sodium at the Wicker well from the sample collected on 6-18-2019 was at 169,000 ug/l. This is equivalent to 169 mg/l which is below the SMCL guideline set by the US EPA.

Furthermore, BRI has not been in the snowplowing business since 2014 and has not stored salt in the red building or anywhere else on the Site since that time. In addition, salt was stored inside to keep it from being exposed to moisture/weather and this would prevent the salt from collecting in runoff and infiltrating into the groundwater.

Arsenic is naturally occurring in rocks and soil across Minnesota and can dissolve in groundwater. There have been no arsenic levels above detection limits in the analyzed samples to date. While the detection limits the lab has used for some of analysis were above the EPA's MCL of 10 ug/l, the detection limits used in the analysis since 2018 have been lower than the EPA's MCL and the results of the arsenic levels are either non-detect or below the EPA's MCL in all of the water and groundwater samples collected since 2018. BRI will ensure that all future testing will be analyzed based on current EPA and MDH water quality standards and regulations.

Topic #5: Allowable Depth of Mine

Excerpt from CUP Report: Bituminous Roadways is currently permitted to mine to an elevation of 840 feet above sea level. This is a mining depth of 60-90 feet based on the site, based on ground elevation. The applicant is proposing to mine to a depth of 800 feet which would allow Bituminous Roadways to increase the maximum mining depth by 40 feet and extract up to an additional 3.4 million cubic yards of sand and gravel material. However, two of the wells on the property are 825 feet above sea level. See Exhibit #7 for an elevation view. The increase in the mining depth is estimated to add approximately 10 years to the life of the mine. The expected duration of mining is 30 years in total. Actual life will depend upon market demand.

Bituminous Roadways' response to Topic #5: Well #243 (well No. H315697) was the test bore-hole that is now sealed, well #242 (well No. 780331) is the active high capacity well at the Site that is used for the wash plant and draws water from the Tunnel City/Wonewoc Aquifer. The ground elevation shown on the well logs for the high capacity well and sealed bore-hole are incorrect. The ground elevation at this well is shown on the plan sheet C-1, Existing Conditions, from a field survey at elevation 851.13 feet MSL. The topography on sheet C-1 is from a drone-aerial survey completed in December 2022. The aerial topography shows the ground elevation near the wash plant and high capacity well around 851 feet MSL. The aerial topography shows that the wash ponds that are adjacent to the well are between elevations 842 and 848 feet MSL, nowhere near elevation 825 feet MSL. Another source of Site topography is available on the Dakota County GIS website which shows the ground elevation around 850 feet MSL near the wash plant and high capacity well on the Site. Exhibit #7 prepared by Commissioner Heidenreich does not accurately show the ground elevation at active high capacity well and the sealed bore-hole, nor does it show the correct groundwater flow pattern. Groundwater flows generally from west to east across the Site and does not flow from the high capacity well on the BRI Site to the south towards the Larry Plan well (sealed well No. 362539) or the Robert Plan well (well No. 207296).

Topic #6: Concerns with Increasing the Mining Depth

Based on previous reports from Barr Engineering, MDH well records, and regional static water levels, the known upper surface level of the Prairie du Chien-Jordan aquifer is indicated by the average static water level at the time each well was installed. The average static water level based on seasonal fluctuations is between 825'-845' ASL.

Map ID #72 618538 Elevation: 1005 Static: 840'

Map ID #73 658996 Elevation: 1004 Static: 804'

Map ID #86 561788 Elevation: 1021 Static: 821'

Map ID #241 Wicker Well Elevation: 889' Static: 789'

Important note: The actual elevation based on the wicker property survey and Well Data is the original surface of the land before mining was 889' ASL since at least 2013 MDH well records show the depth of the mine is already past the 840' permitted depth. Unique well numbers and Map ID Numbers 780331 #242 and 272766 #243 show the depth at 825' 15' below the allowable 840. This is not a typo, as suggested in previous conversations; the scanned handwritten well records recorded at the MDH by different licensed drillers confirm the true value.

Bituminous Roadways response to Topic #6: The first 3 wells (well Nos. 618538, 658996, and 561788) are all finished in the Prairie Du Chien-Jordan Aquifer. These three wells are located approximate $\frac{3}{4}$ of a mile to the west of the Site. It is well known that the water table flows from west to east, therefore the water table west of the Site will be higher than it is at the Site. The water table elevation at the Site is provided in the cross-section Figure 9 from Barr's Environmental Review. This figure shows the water table to be 8-15 feet below elevation 800 feet MSL.

Well ID #243 (well No. 272766) was the test bore-hole that was drilled to investigate the stratigraphy prior to installation of the actual high capacity well and the bore-hole is now

sealed. Well ID #242 (well No. 780331) is the active high capacity well at the Site that is used at the wash plant. The ground elevation shown on the well logs are incorrect. The ground elevation at this well is shown on the plan sheet C-1 at elevation 851.13 feet MSL which was located during construction staking by a Minnesota licensed land surveyor. Not many well installations have the locations and elevations of the installed wells surveyed and GPS or quad map elevations are not very accurate. Unfortunately mistakes do happen and some of the well logs available on the MDH well index and the Dakota County GIS website are incorrectly located and/or reported. There was an error with the ground elevation on the original well application and this error has carried through to the hand-written well log and available documentation on the MDH and Dakota County well inventory sites. The ground elevation of 851.13 feet MSL at the high capacity well number 780331, has been confirmed in the past by Minnesota licensed land surveyors, Sunde Land Surveying, LLC. This can be re-surveyed to be re-validated on-site, if necessary.

Topic #7: Why Mining Depth Matters

As previously discussed, aquifers and local wells are protected by the separation of sand and gravel acting as a filter medium, the mining operation is removing this media and the effect of washing gravel, DRO contamination, and REDOX is concentrating the arsenic and other pollutants in the remaining soil to easily mix with the aquifer, Images taken on October 1st, 2022 show what appears to be the surface of the Prairie du Chien-Jordan aquifer, the meteorological conditions prior to the date indicated we were in severe drought conditions. You can see the water on the surface of the sand.

Bituminous Roadways' response to Topic #7: The image taken on October 1st, 2022 does not show the surface of the Prairie du Chien-Jordan aquifer. This is just damp sand. There is moisture naturally retained in the deep sand and when disturbed the sand appears damp even in dry conditions. It has been confirmed in Barr's Environmental Review that the water table is approximately 50-65 feet below the mine floor.

Barr's Environmental Review has also concluded that increasing the allowed mining depth to 800 feet MSL will not adversely affect the rate or direction of groundwater flow. The groundwater flows from east to west and per Barr's Environmental Review the only groundwater user downgradient of the BRI Site is the Wicker well (well No. 847817). Since this well is screened 140 feet below the water table it is highly unlikely that any potential groundwater impacts at the BRI site would reach the water supply at the new Wicker well. Barr has recommended some additional permit conditions to further protect the groundwater below the Site. BRI is willing to work with the City in providing measures to ensure that the Site is operated and managed to protect the groundwater and environment to the maximum extent practicable.

Topic #8: Unsealed Wells on the Bituminous Property and Nearby Lands

*Under State law, the discovery of an unsealed well must be reported to the MDH
103I.301 WELL SEALING REQUIREMENTS.*

Subdivision 1. Wells and borings. (a) A property owner must have a well or boring sealed if:

- (1) The well or boring is contaminated or may contribute to the spread of contamination;*
 - (2) The well or boring was attempted to be sealed but was not sealed according to the provisions of this chapter;*
or
 - (3) The well or boring is located, constructed, or maintained in a manner that its continued use or existence endangers groundwater quality or is a safety or health hazard.*
- (b) A well or boring that is not in use must be sealed unless the property owner has a maintenance permit for the well.*
- (c) The property owner must have a well or boring sealed by a licensed person authorized to seal the well or boring, consistent with provisions of this chapter.*

Topic #9: Why Sealing a Well Matters

An Unsealed well or one that has been damaged can allow toxins to easily and directly enter the groundwater supply.

In this case, several unsealed wells were identified on October 31st, 2022 these wells were easily visible to anyone yet no report was made nor was there an attempt to seal them, they appear to have been damaged several times by heavy equipment and sections of casings were removed over time, See Exhibit #7; Images 2 & 3 and Exhibit #2 aerial images.

The failure to notify and correct this violation contributes to the concerns, regarding the lack of transparency to the Regulating Government Authorities (RGA) and the citizens of Dakota County and the City of IGH.

Bituminous Roadways' Response to Topics #8 and #9: There was one unsealed well discovered in the fall of 2022 located in the south-east area of the mine Site. This well was part of the homestead on the south expansion property. This well was exposed along with a sealed well (well No. H163359, sealed in 2000) while mining the area in the fall of 2022. This discovery has since been reported to MDH and has been sealed in accordance with State well sealing ordinances by licensed well driller, Terry Maher Well Drilling, Inc. on November 26th, 2022 (well sealing record No. H347873).

Topic #10: Observations and Recommendations

It is my strong recommendation that this CUP be denied to Bituminous Roadways at this time. The property owners have allowed frequent and continued violations of the current CUP, they have endangered the Prairie du Chien-Jordan aquifer and likely other nearby aquifers. Wells in the area have become unusable, the depth of the mine has long exceeded the allowable limits. While I think we can all agree that the community needs a source for gravel to create, replace and improve our roads, we need to ask ourselves: "At what cost?"

Two other questions we should ask:

- Is there a higher and better use for this property?*
- Can the gravel be sourced from another location at a similar cost?*

The answer to both these questions is YES!! In its current location, the Bituminous Roadway property is preventing the City and County from making the needed arterial connection and realignment of the Cliff Road to

117th St. artillery connection and the realignment of the Akron ave "Plan D" connection. The high growth rate in Rosemount, Empire, and Eagan requires that some action be taken soon. The community cannot wait 30-plus years of continued environmental destruction.

The current method of checks and balances for monitoring this site isn't working, I would also suggest that oversight be given to the City Environmental commission for annual review. Notices of strong action should be filed with the MDH, MNPCA, US EPA, and Dakota County Environmental commission.

Bituminous Roadways' Response to Topic #10: There are no records of any violations filed with the City, County or State. The Site has been actively mined since 1963 and the asphalt production facility has been permitted since 1980. BRI has always complied with all permit regulations associated with the mine Site, the asphalt plant, and associated mining activities. BRI operates in good standing with all active permit authorities including the MPCA, the MNDNR, Dakota County and the City. Any issues that may have come up have been responded to and resolved as quickly as possible.

BRI has complied with the CUP conditions in testing downgradient and neighboring wells. The test results have shown no exceedances of primary drinking water standards in concentrations of analytes tested.

BRI's site is located in a highly commercial and industrial area. All but a few of the neighboring residential properties are located to the west of the Site with the closest neighbor over 500 feet away from the mining limits and most at least ¼ mile away. The west side of the Site is well buffered by distance and with heavy tree coverage. This Site utilized as a sand and gravel mine is indeed a necessary and valuable use of the property.

The Importance of High Quality Aggregate Resources: The availability of high quality aggregate resources within the seven-county metropolitan area is rapidly diminishing. Development pressure removes the potential to access aggregate resources through land development and zoning decisions. This only serves to increase the demand for construction aggregates. The Metropolitan Council and the Minnesota Geological Survey have recognized the value of identifying and preserving those remaining aggregate resources. On a local scale, when potential aggregate resources are not permitted for extraction and utilization of the resource, the aggregates must be shipped from further distances creating a burden on public infrastructure, increased greenhouse gas emissions, and increased costs due to the high environmental and economic cost of importing aggregates from more distant locations. The cost of all projects requiring aggregates increases with the increased distance from the source. Larger projects such as airport runways, road construction, schools, local streets, community centers, and medical facilities are impacted the most.

The state, as well as local governments including counties, cities, and townships, depend on a continual supply of aggregate materials for road building and other community infrastructure. It is estimated that 10 tons of aggregate are consumed per person per year.

Aggregates are used in growing communities in a number of applications including concrete and asphalt mixes, foundations for highways and structures, railroad ballast, road shoulder stabilization, gravel roads, driveways, riprap/erosion control, shoreland stabilization, snow and ice control, drainfields, golf course sand, infield mix, recreational trails, landscape rock, engineered backfill, retaining wall blocks and beaches.

It is a challenge to find good aggregate sources. Sand and gravel deposits have to be clean enough - lacking significant amounts of clay and fine material associated with the majority of glacial till deposits and not have significant amounts of deleterious materials that impact quality. The Bituminous Roadways Mine is mapped by the Minnesota Geological Survey on Plate 9 of 9 of the Dakota County Geologic Atlas¹ as being a Primary Sand and Gravel Resource. To qualify as a primary sand and gravel resource, the deposit must be located in an area where the deposit is more than 35% gravel, thicker than 20 feet, and less than 10 feet of overburden. Geological processes are responsible for the distribution of sand and gravel deposits and the quality of the deposit. Primary sand and gravel deposits that are economically viable are where they are. Humans can't control that. It is important to identify where these resources are, so that land use decisions can be made that recognize the value of this rapidly diminishing resource and ensure that it can be utilized before urbanization occurs. The 2000 Aggregate Resources Inventory of the Seven County Metropolitan Area, prepared by the Minnesota Geological Survey and the Metropolitan Council² estimated that available deposits would be depleted in the seven-county metropolitan area by 2030 if efforts were not made to identify and protect deposits for extraction prior to urbanization. It is, therefore, sound land use planning to allow the extraction of this available high quality resource under the on-going authority of the Conditional Use Permit and interim sand and gravel zoning overlay ordinance.

¹ Balaban, N.H.; Hobbs, H.C. (1990). C-06 Geologic atlas of Dakota County, Minnesota. Minnesota Geological Survey. Retrieved from the University of Minnesota Digital Conservancy, <https://hdl.handle.net/11299/58494>.

² Southwick, D.L., Jouseau, M., Meyer, G.N., Mossler, J.H., and Wahl, T.E., 2000, Aggregate resources inventory of the seven-county metropolitan area, Minnesota: Minnesota Geological Survey Information Circular 46.

Sunde Engineering, PLLC.
10830 Nesbitt Avenue South
Bloomington, MN 55437-3100
Phone: (952) 881-3344
Fax: (952) 881-1913



MEMORANDUM

To:	Allan Hunting, City Planner City of Inver Grove Heights	Date: 12/21/2022
From:	Michaelea Whelan, Sunde Engineering Kent Peterson, Bituminous Roadways, Inc.	Responses by Sunde/BRI in blue
Subject:	Bituminous Roadways 2022 CUP Application Response to Planning Commission Comments	
CC:		

Response to Questions submitted by Planning Commissioner Robert Heidenreich via. email on 11/22/2022:

The recently discovered "old farmstead" well in the SE area of the mine has now been sealed. Attached is the well sealing record #347873. Both "old farmstead" wells on the site have now been sealed.

Some of the details conflict with previously reported data, and publicly documented known information.

Bituminous Roadways response: We are unaware of the conflicting information. What information, specifically, is conflicting?

1) I understand now how I thought the Plan well was Unique number 426388 vs 207290 there are two wells on file described as "PLAN"

Bituminous Roadways response: There are two "PLAN" wells, but on the water testing map, the well labeled "C-PLAN WELL" is the Robert Plan well, ID 207296, that is tested.

2) I still have some confusion as to the well listed as Wicker #241 #435227 as it relates to the test data and schedule provided. Wicker well #847817 seems one was sealed and a new one drilled in April of 2020 If that's the case then the reported data is flawed.

Bituminous Roadways response: Todd Wicker installed a new well (ID 847817) in April of 2020 and sealed the old well (ID 435227). The groundwater samples from the Wicker property were taken from the active well on the property at the time the sample was retrieved. The new well at the Wicker property is constructed approximately 60 feet deeper than the previous well with both, the sealed and active, wells being finished in the sand and gravel aquifer. The results of the well water samples from the active well that was tested represent the groundwater quality in the sand and gravel aquifer that is downstream from the BRI mine site. The results are not flawed. The well log for well ID 847817 and the well sealing record for well ID 435227 are attached.

3) It would be very helpful to have the actual well numbers that are being tested on those dates rather than just the names of the property owners as using names alone can be confusing.

Bituminous Roadways response: The Unique well ID numbers will be added to future well water tests and the testing report.

Well number clarification?

1) *Wicker #435227 #241 and Wicker well #847817 This data seems to indicate that the wells being tested today are not the same wells that were tested in the past.*

Bituminous Roadways response: Figure 10 of the 2020 EAW documents was prepared in early 2020. The Wicker well ID 435227 was sealed in April 2020 and Wicker well ID 847817 was constructed in April 2020. The well logs had not been updated at the time that Figure 10 was prepared and well #241 (well ID 435227) was the known active well at the time. Groundwater samples are retrieved from the active well at the Wicker property. Samples from the active well at the Wicker property represent the groundwater quality in the sand and gravel Aquifer.

2) *780331 #242, 227766 #243 These wells show an elevation on multiple documents as having an elevation of 825' ASL installed in 2013 the current mining limit is only allowed to be 840' ASL when I drove onto property on November 1st 2022 my GPS also showed that the mine was well below the allowed mining limits and very close to the documented static water levels of the surrounding residential wells.*

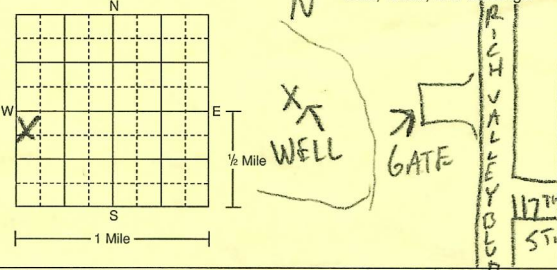
Bituminous Roadways response: #243 well ID 272766 was the test bore-hole that is now sealed, #242 well ID 780331 is the active high capacity well at the site that is used at the wash plant. The ground elevation shown on the well logs are incorrect. The ground elevation at this well is shown on the plan sheet C-1 from a field survey at elevation 851.13 feet above msl.

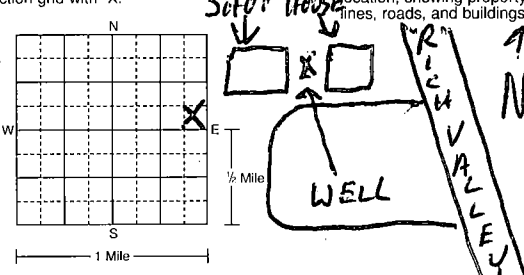
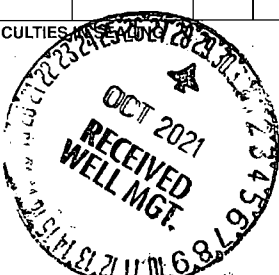


A small area in the southeast portion of the mine was excavated slightly below the mining limits to take samples of the material below the current mining limits for this permit application. Groundwater was not encountered. This area has been backfilled and brought back up to the allowed mining elevation. The approximate static water level of the new Wicker well (ID 847817) is ~790 feet above msl, approximately 50 feet below the mine floor elevation. The GPS elevation tools on phones are not very accurate and can vary by 20 feet, more or less.

3) *The well(s) described as Rainbow all show as sealed without the specific well numbers that are being tested there is not a valid way to verify which well is being tested and if it changes over time similar to Wicker well data.*

Bituminous Roadways response: The rainbow well that is tested is well ID# 608018. This well has been active since 1998 and is the only "Rainbow" well that has been tested to date. The MN well index does show one Bituminous Roadways well that has been sealed, ID #174673. This well was not part of the groundwater monitoring.

WELL OR BORING LOCATION					MINNESOTA DEPARTMENT OF HEALTH WELL AND BORING SEALING RECORD Minnesota Statutes, Chapter 103I		Minnesota Well and Boring Sealing No. Minnesota Unique Well No. or W-series No. (Leave blank if not known)		H 347873									
County Name DAKOTA					Township Name I.G.H.		Township No. 27		Range No. 22		Section No. 33		Fraction (sm. → lg.) N 1/4 N 1/4 W 1/4 W 1/4		Date Sealed 11-26-2022		Date Well or Boring Constructed UNKNOWN	
GPS LOCATION – decimal degrees (to four decimal places) Latitude _____ Longitude _____										Depth at Time of Sealing 272 ft.				Original Depth N/A ft.				
Numerical Street Address or Fire Number and City of Well or Boring Location 11201 RICH VALLEY BLVD I.G.H.										☒ Single Aquifer ☐ Multiaquifer ☒ WELL/BORING ☒ Water-Supply Well ☐ Monit. Well ☐ Env. Bore Hole ☐ Other _____				☒ Measured Date Measured 11-23-2022 ☐ Estimated 33 ft. ☒ below ☐ above land surface				
Show exact location of well or boring in section grid with "X." 										CASING TYPE(S) ☒ Steel ☐ Plastic ☐ Tile ☐ Other _____				WELLHEAD COMPLETION Outside: ☐ Pitless Adapter/Unit ☐ At Grade ☐ Well Pit ☒ Other 6" CUT-OFF CASING ☐ Buried Inside: ☐ Basement Offset ☐ Well House ☐ Well Pit ☐ Buried ☐ Other _____				
PROPERTY OWNER'S NAME/COMPANY NAME BITUMINOUS ROADWAYS INC. Property owner's mailing address if different than well location address indicated above 1520 COMMERCE DR. MENDOTA HEIGHTS MN										CASING(S) Diameter 6 in. from 0 to 230 ft. Set in oversized hole? ☐ Yes ☐ No Annular space initially grouted? ☐ Yes ☐ No ☐ Unknown								
WELL OWNER'S NAME/COMPANY NAME										SCREEN/OPEN HOLE Screen from _____ to _____ ft. Open Hole from 230 to 272 ft.								
Well owner's mailing address if different than property owner's address indicated above										OBSTRUCTIONS ☒ Rods/Drop Pipe ☐ Check Valve(s) ☐ Debris ☐ Fill ☐ No Obstruction Type of Obstructions (Describe) 105' OF 1" DROP PIPE, WIRE & PUMP								
GEOLOGICAL MATERIAL										Obstructions removed? ☒ Yes ☐ No Describe FISHED OUT WITH OVERSHOT								
If not known, indicate estimated formation log from nearby well or boring.										PUMP ☐ Not Present ☒ Present, Removed Prior to Sealing ☐ Other _____ Type 1 H.P. SUBMERSIBLE								
DRIFT BROWN SOFT 0 230 LIMEROCK YELLOW HARD 230 272										METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE ☒ No Annular Space Exists ☐ Annular Space Grouted with Tremie Pipe ☐ Casing Perforation/Removal Casing Diameter _____ in. from _____ to _____ ft. ☐ Perforated ☐ Removed _____ in. from _____ to _____ ft. ☐ Perforated ☐ Removed Type of Perforator _____								
VARIANCE Was a variance granted from the MDH for this well? ☐ Yes ☒ No TN# _____																		
GROUTING MATERIAL(S) (One bag of cement = 94 lbs., one bag of bentonite = 50 lbs.) Grouting Material NEAT CEMENT from 272 to 0 ft. 78 bags																		
OTHER WELLS AND BORINGS Other unsealed and unused well or boring on property? ☐ Yes ☒ No How many? _____																		
REMARKS, SOURCE OF DATA, DIFFICULTIES IN SEALING										LICENSED OR REGISTERED CONTRACTOR CERTIFICATION This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge. TERRY MAHER WELL DRILLING INC. 1908 Licensee Business Name License or Registration No. ML n L 4564 11-28-2022 Certified Representative Signature Certified Rep. No. Date MIKE BANASTZEWSKI / PAT MAHER Name of Person Sealing Well or Boring								
IMPORTANT-FILE WITH PROPERTY PAPERS-WELL OWNER COPY										H 347873								

MINNESOTA DEPARTMENT OF HEALTH WELL AND BORING SEALING RECORD Minnesota Statutes, Chapter 103I					Minnesota Well and Boring Sealing No. Minnesota Unique Well No. or W-series No. (Leave blank if not known)		H 347863 435227
WELL OR BORING LOCATION County Name DAKOTA							
Township Name	Township No.	Range No.	Section No.	Fraction (sm. → lg.)	Date Sealed	Date Well or Boring Constructed	
I.G.H.	27	22	32	E 1/4 E 1/4 N 1/4	4-11-2020	7-5-1987	
GPS LOCATION – decimal degrees (to four decimal places) Latitude _____ Longitude _____					Depth at Time of Sealing 183 ft. Original Depth 183 ft.		
Numerical Street Address or Fire Number and City of Well or Boring Location 11479 RICH VALLEY BLVD I.G.H.					STATIC WATER LEVEL ☒ Measured Date Measured 4-11-2020 ☐ Estimated		
Show exact location of well or boring in section grid with "X." 					☒ Single Aquifer ☐ Multiaquifer ☒ Water-Supply Well ☐ Monit. Well ☐ Env. Bore Hole ☐ Other _____		
CASING TYPE(S) ☒ Steel ☐ Plastic ☐ Tile ☐ Other _____					92 ft. ☐ below ☒ above land surface		
WELLHEAD COMPLETION Outside: ☒ Pitless Adapter/Unit ☐ At Grade ☐ Well Pit ☐ Other _____ ☐ Buried					Inside: ☐ Basement Offset ☐ Well House ☐ Well Pit ☐ Buried ☐ Other _____		
PROPERTY OWNER'S NAME/COMPANY NAME TODD K WICKER					CASING(S) Diameter 4 in. from 0 to 177 ft. Set in oversized hole? ☒ Yes ☐ No Annular space initially grouted? ☒ Yes ☐ No ☐ Unknown		
Property owner's mailing address if different than well location address indicated above 11479 RICH VALLEY BLVD I.G.H. MN 55077-5509					_____ in. from _____ to _____ ft. ☐ Yes ☐ No ☐ Yes ☐ No ☐ Unknown _____ in. from _____ to _____ ft. ☐ Yes ☐ No ☐ Yes ☐ No ☐ Unknown		
WELL OWNER'S NAME/COMPANY NAME					SCREEN/OPEN HOLE Screen from 177 to 183 ft. Open Hole from _____ to _____ ft.		
Well owner's mailing address if different than property owner's address indicated above					OBSTRUCTIONS ☐ Rods/Drop Pipe ☐ Check Valve(s) ☐ Debris ☐ Fill ☒ No Obstruction Type of Obstructions (Describe) _____		
GEOLOGICAL MATERIAL GRAVEL	COLOR BROWN	HARDNESS OR FORMATION MED	FROM 0	TO 183	Obstructions removed? ☐ Yes ☐ No Describe _____		
If not known, indicate estimated formation log from nearby well or boring.					PUMP ☐ Not Present ☒ Present, Removed Prior to Sealing ☐ Other _____ Type SUBMERSIBLE		
METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE ☒ No Annular Space Exists ☐ Annular Space Grouted with Tremie Pipe ☐ Casing Perforation/Removal Casing Diameter _____ in. from _____ to _____ ft. ☐ Perforated ☐ Removed _____ in. from _____ to _____ ft. ☐ Perforated ☐ Removed Type of Perforator _____					VARIANCE Was a variance granted from the MDH for this well? ☐ Yes ☒ No TN# _____		
RECEIVED JAN 29 2021 Physical Development Division					GROUTING MATERIAL(S) (One bag of cement = 94 lbs., one bag of bentonite = 50 lbs.) Grouting Material NEAT CEMENT from 0 to 183 ft. 16 bags _____ from _____ to _____ ft. _____ bags _____ from _____ to _____ ft. _____ bags		
REMARKS, SOURCE OF DATA, DIFFICULTIES 					OTHER WELLS AND BORINGS Other unsealed and unused well or boring on property? ☐ Yes ☒ No How many? _____		
MINN. DEPT OF HEALTH COPY H 347863					LICENSED OR REGISTERED CONTRACTOR CERTIFICATION This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge. TERRY MAHER WELL DRILLING INC. 1908 Licensee Business Name License or Registration No. 304 5-16-2020 Certified Rep. No. Date MIKE BANASZEWSKI Name of Person Sealing Well or Boring		

WELL OR BORING LOCATION

County Name

Dakota

Township Name

Inver Grove Heights

Township No.

27

Range No.

22

Section No.

32

Fraction (sm. N lg.)

S 5 E 1/4 E 1/4 E 1/4

GPS LOCATION (decimal degrees (to four decimal places))

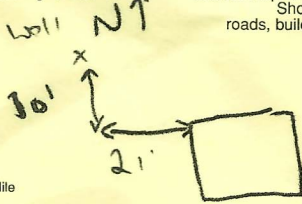
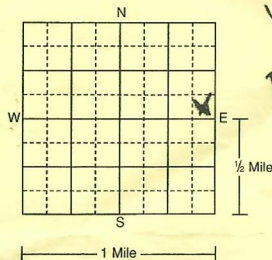
Latitude 44.7835 Longitude 91.0657

House Number, Street Name, City, and ZIP Code of Well Location

11479 Rich Valley Blvd IGH 55077

Show exact location of well/boring in section grid with "X."

Sketch map of well/boring location. Showing property lines, roads, buildings, and direction.



PROPERTY OWNER'S NAME/COMPANY NAME

Todd Wicker

Property owner's mailing address if different than well location address indicated above.

WELL OWNER'S NAME/COMPANY NAME

Well/boring owner's mailing address if different than property owner's address indicated above.

GEOLOGICAL MATERIALS	COLOR	HARDNESS OF MATERIAL	FROM	TO
Clay	Brown	S	0	5
Sand w/ clay	Brown	S	5	95
Fine Sand	Brown	S	95	240
Coarse Sand	Brown	m	240	245

Use a second sheet, if needed.

REMARKS, ELEVATION, SOURCE OF DATA, etc.

Terry Maher Well Drilling will seal the old well

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING CONSTRUCTION RECORD

Minnesota Statutes, chapter 103I

MINNESOTA UNIQUE WELL
AND BORING NO.

847817

WELL/BORING DEPTH (completed)

245

DATE WORK COMPLETED

ft. 4/7/2020

DRILLING METHOD

- ☐ Cable Tool
☐ Auger
☐ Other

- ☐ Driven
☒ Rotary

- ☐ Dual Rotary
☐ Rotasonic

DRILLING FLUID

Water

WELL HYDROFRACTURED? ☐ Yes ☒ No

From _____ ft. To _____ ft.

USE

- ☒ Domestic
☐ Noncommunity PWS
☐ Community PWS
☐ Elevator

- ☐ Monitoring
☐ Irrigation
☐ Dewatering

- ☐ Heating/Cooling
☐ Industry/Commercial
☐ Remedial

CASING MATERIAL

- ☒ Steel
☐ Plastic

Drive Shoe? ☒ Yes ☐ No
☐ Threaded ☒ Welded

HOLE DIAM.

CASING Diameter

4

Weight

11

Specifications

in. To 240

ft.

lbs./ft.

6 1/2 in. To 195

ft.

lbs./ft.

ft.

lbs./ft.

ft.

lbs./ft.

SCREEN

Make Johnson

Type Stainless Steel

Slot/Gauge 10

Set between 240 ft. and 245 ft.

Diam. 3 inch

Length 5 ft

Fittings 2 ft. back, K pack

STATIC WATER LEVEL

100

ft.

☒ Below ☐ Above land surface

Date measured 4-7-20

Dry hole ☐ Yes ☒ No

PUMPING LEVEL (below land surface)

ft. after

hrs. pumping

g.p.m.

WELLHEAD COMPLETION

☒ Pitless/adaptor manufacturer Mess

Model

☐ Casing protection☐ 12 in. above grade☐ At-grade ☐ Well House ☐ Hand Pump

GROUT INFORMATION (specify bentonite, cement-sand, neat-cement, concrete, cuttings, or other)

Material Bentonite From 0 To 195

ft.

6

☐ Yds. ☒ Bags

Material From To

ft.

☐ Yds. ☐ Bags

Material From To

ft.

☐ Yds. ☐ Bags

Driven casing seal From To

Bags

One bag = 94 lbs. cement or 50 lbs. bentonite

NEAREST KNOWN SOURCE OF CONTAMINATION

Well is 51 feet NW

direction from Sewerline type

Well disinfected upon completion? ☒ Yes ☐ No

PUMP

☒ Not installed Date installed

Manufacturer's name

Model Number

HP

Volts

Length of drop pipe

ft.

Capacity

g.p.m.

Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐

ABANDONED WELLS

Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE

Was a variance granted from the MDH for this well? ☐ Yes ☒ No TN#

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, chapter 4725. The information contained in this report is true to the best of my knowledge.

Hartmann Well Drilling 1622

Licensee Business Name

Lic. or Reg. No.

A. N. V. t.

1099

4/14/2020

Certified Representative Signature

Certified Rep. No.

Date

Pat Schatz

Name of Driller

FILE WITH PROPERTY PAPERS WELL OWNER COPY

847817

HE-0

Sunde Engineering, PLLC.
10830 Nesbitt Avenue South
Bloomington, MN 55437-3100
Phone: (952) 881-3344
Fax: (952) 881-1913



MEMORANDUM

To:	Allan Hunting, City Planner City of Inver Grove Heights	Date: 11/18/2022
From:	Michaelea Whelan, Sunde Engineering Kent Peterson, Bituminous Roadways, Inc.	Responses by Sunde/BRI in blue Responses to be addressed by Barr/City in red
Subject:	Bituminous Roadways 2022 CUP Application Response to Planning Commission Comments	
CC:		

This memorandum is to provide the applicant response to Commissioners questions and comments from the November 1, 2022 Planning Commission meeting and from emails of various dates sent to City staff by Commissioner Heidenreich. Plan sheet C-1, Existing Conditions, has been updated to clarify some site-related questions and is attached.

Response to Question from 11/01/22 Planning Commission Meeting from Planning Commissioner Challeen:

- 1) *Commissioner Challeen's questions during the 11/01/2022 Planning Commission Meeting regarding definitions of terms*
 - a. *Definition of Clean soils:*
Bituminous Roadways response: Backfill material is described in section IV.2 of the permit application materials. Clean soils is described as "only non-organic compactable soil material that is free of contamination, recycled or salvaged aggregate, asphaltic pavement, crushed concrete, scraps of shingles, debris, rubbish, frozen soil, boulders over 1-inch in diameter, logs, wood chips or other objectionable material." "BRI will maintain a manifest from each off-site soil source indicating where soils are imported from. The manifest will include a statement that no contaminants are suspected to be in the soil material, information regarding location of where the soils are placed on Site, and an approximate volume of material imported. Manifest records will be maintained by BRI and made available to the City upon request."
 - b. *Rapid Response:*
Bituminous Roadways response: BR's response to a measurable spill is outlined in the Site's SPCC Plan. Section 2.5 of the Plan outlines the procedures and the on-site and outside Emergency Contacts (attached is section 2.5 from the SPCC plan). "A trained responder is to take immediate action to prevent further spillage and to confine the spill to the smallest practical area." Depending on the size and nature of the spill, outside response contractors may be called in. The MN Duty Officer is to be notified for spills that exceed 5 gallons. Records are to be kept for all measureable spill incidents.

Bituminous Roadways, Inc. 2022 CUP Application
Memo Response to Planning Commission Comments

Response to Questions submitted by Planning Commissioner Robert Heidenreich via. email on
10/31/2022:

- 1) There are two wells that have not been identified on the plans we were provided. I attached actual photos and the site plans we were provided.
 - a. Bituminous Roadways response: The wells identified are in the location of the farmstead that was on the SE location of the south portion of the property. One well was sealed prior to BR purchasing the south property. The buildings were demolished after Bituminous Roadways purchased the property. Mining activity was initiated in this area when the second, unsealed well was discovered. This unsealed well is in the process of being cleaned and abandoned in accordance with Minnesota State Statutes by a MN licensed well contractor. The sealing record will be provided once it is complete. Below is the well disclosure certificate showing the first well was sealed in 2000.



MINNESOTA DEPARTMENT OF HEALTH
WELL DISCLOSURE CERTIFICATE
PLEASE TYPE OR PRINT ALL INFORMATION

* Fill out a separate well information page if more than three wells are located on the property.

WELL #1				
COUNTY	QUARTER (OR GOVERNMENT LOT)	SECTION NUMBER	TOWNSHIP NUMBER	RANGE NUMBER
DAKOTA	NE 1/4 SW 1/4 &	32	27	22
WELL STATUS WELL IS: ☒ IN USE (1) ☐ NOT IN USE (2) ☐ SEALED BY LICENSED WELL CONTRACTOR (3) If the well has been sealed by someone other than a licensed well contractor or a licensed well sealing contractor, check the well status as not in use.			YEAR WELL WAS SEALED (IF KNOWN) 27 NAME OF LICENSED WELL CONTRACTOR	

WELL #2				
COUNTY	QUARTER (OR GOVERNMENT LOT)	SECTION NUMBER	TOWNSHIP NUMBER	RANGE NUMBER
Same	as above			
WELL STATUS WELL IS: ☐ IN USE (1) ☐ NOT IN USE (2) ☒ SEALED BY LICENSED WELL CONTRACTOR (3) If the well has been sealed by someone other than a licensed well contractor or a licensed well sealing contractor, check the well status as not in use.			YEAR WELL WAS SEALED (IF KNOWN) 2000 NAME OF LICENSED WELL CONTRACTOR Kimmes - Bauer	

WELL #3				
COUNTY	QUARTER (OR GOVERNMENT LOT)	SECTION NUMBER	TOWNSHIP NUMBER	RANGE NUMBER
WELL STATUS WELL IS: ☐ IN USE (1) ☐ NOT IN USE (2) ☐ SEALED BY LICENSED WELL CONTRACTOR (3) If the well has been sealed by someone other than a licensed well contractor or a licensed well sealing contractor, check the well status as not in use.			YEAR WELL WAS SEALED (IF KNOWN) NAME OF LICENSED WELL CONTRACTOR	

SKETCH MAP - Sketch the location of the well(s) and include estimated distances from roads, streets, and buildings.
IF MORE THAN ONE WELL ON PROPERTY, USE THE WELL LOCATION NUMBER ABOVE TO IDENTIFY EACH WELL.

- 2) *A third image from the same location West from the East Access looking north shows what appears to be wet sand caused by contact with the Prairie Duchenne aquifer. This is concerning as there is foundry sand being stored near this location. It appears that the Barr report incorrectly has identified the water level or BR has excavated below the approved depth at this time. Barr report PDF page 54*
 - a. **Barr will address**
- 3) *The location map provide on Pg 19 of the PDF labeled "Location Map Case No. 22-37SC the boundaries on this map differ from property records, and other maps and charts provided in the packet PDF pages 29,42,47,49 are specific examples*
 - a. **Staff addressed**
- 4) *Page 2 of the Sept 29th Barr, PDF page 55 mentions the "Groundwater Quality " Barr states dewatering isn't required and Nearby wells won't be negatively impacted, there is no mention of the High Volume Well installed in 2012 that removes 450 GPM. A scientist from the DNR present at the public meeting in 2012 describes this well as the perfect storm. Well tests have been required on these and several other wells in the area and the City has been provided copies of the report as IGH is the RGA*
 - a. **Barr will address**
- 5) *The permit application from Sunde engineering at BR's request states on Page 7 Paragraph 5 "Neighboring Properties" A property owners list within 1000 feet of the Site is included in Attachment 1. I am unable to locate Attachment 1 to verify if the proper neighbors have been identified and given proper notice.*
 - a. **Staff addressed**
- 6) *The PID numbers provided in the original Ordinance adopted in 2002 and renewed as of 8/18/2017 and is the subject of Tuesday's meeting, are not valid PID numbers as listed in the GIS system and additional descriptions does not describe the affected area correctly as shown in some of the charts*
 - a. **Staff addressed**
- 7) *I would like to respectfully request and be provided with all available past, and current test reports from the DNR well tests, EPA and PCA reports and violations. Additionally, The Well Abandonment/Closure data for the two exposed wells*
 - a. **Staff addressed**

Response to Questions submitted by Planning Commissioner Robert Heidenreich via email on
11/2/2022:

1) *The Polluted Foundry sand is in the documents attached and said to be in the Southeast Corner, Kent Peterson claimed several times it was in a berm on the north boundary of the property. The location of this regulated material has moved on paper several times in the past. I should think the exact location should be located, verified and professionally documented as its proximity to the wells and aquifer are important. I don't think this is a one off typo as this location is also disclosed on other public documents. The PDF copy with location written is attached.*

a. Bituminous Roadways response: The foundry sand is located at the central east side of the site (previously the southeast corner prior to purchase of the south parcel), between the site primary access and the Wicker property. Plan Sheet C-1, Existing Conditions has been revised to show the location where the approximately 24 cubic yards of foundry sand was used as fill. This minor amount of foundry sand has been untouched since 1998. There have been tests and analysis conducted on the foundry sand periodically for years. The results have verified that the foundry sand is below hazardous waste levels. Groundwater well tests have been and continue to be tested in accordance with the conditions of the permit. No exceedances of State drinking water standards were found in the test results. No increasing trend of metals or contaminants in the samples have been noted. Documents showing the foundry sand location and test reports are attached to this Memo.

Bituminous Roadways had previously satisfied the permit conditions as noted in the Planning Report from June 19, 2007 (excerpt below).

14. The foundry sand in the northwest berm shall remain in its current location except as it is used. It is to be used in its entirety within the next four (4) years. The foundry sand in the southeast berm will be left undisturbed.

Barr Engineering conducted a site visit in May this year and determined the northwest foundry sand berm is completely gone and vegetation had been established. The southeast foundry sand berm had been undisturbed and contained a vegetative cover. This condition has been satisfied. The condition should be modified to remove the reference to the northwest berm.

15. Bituminous Roadways shall bring no additional foundry sand onto the site.

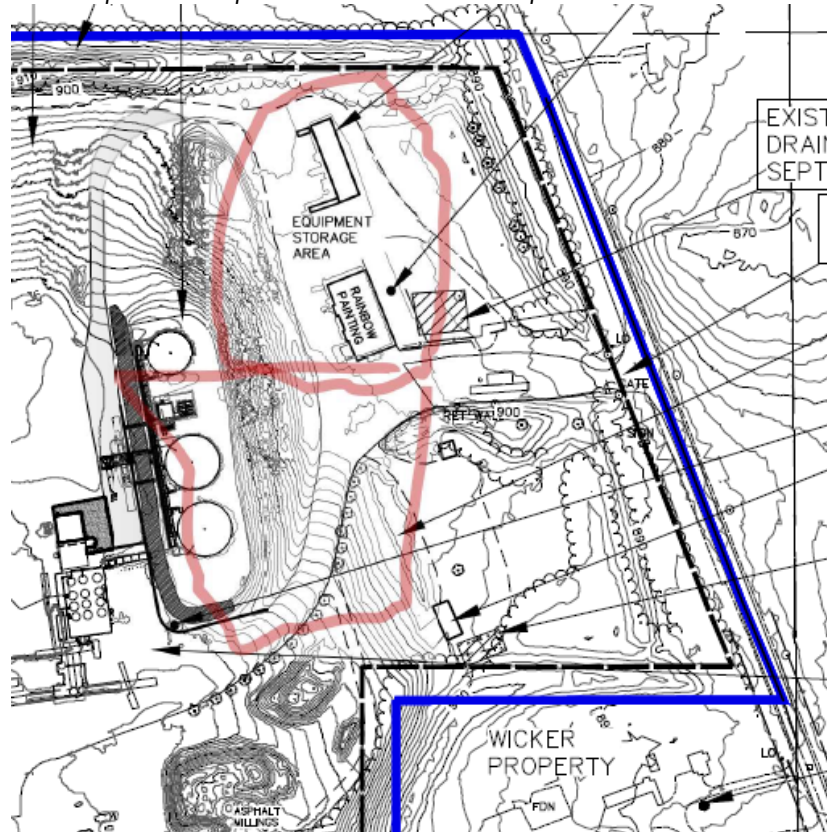
Operational condition. No additional foundry sand has been found on the site.

Planning Report – Case 07-11C
June 19, 2007
Page 6

16. The berms which cover the foundry sand shall be maintained in vegetative cover to control erosion of the foundry sand.

This condition has been satisfied.

- 2) *The reclaimed area in the North east corner in the attached PDF and circled is to the best of my knowledge a dumping location for Asphalt, concrete, steel, CCA treated wood, this area was made available to local contractors in the mid 1990's - 2000's of at the time this area grew and was graded and compacted, eventually building were placed on top of this location. This was done in violation of the backfill requirements listed in the permits. I think a few simple core samples collected in this area will provide the answers.*



- a. Bituminous Roadways response: The northeast corner of the site was not used as a dumping location in the 1990's and 2000's. The Rainbow shop was built in 1980 and the red storage building was placed in its current location in the 1990's. The asphalt cement tanks and a new water line were installed in this area last year and the soils encountered were sand and gravel. Previously recycled rubble asphalt was stockpiled in an area to the west of the Rainbow building, but has been relocated with the construction of the asphalt cement tanks and associated infrastructure.

BR has always recycled concrete and asphalt on-site and has never accepted CCA treated wood. While recycling concrete, the wire mesh and rebar is collected and disposed of off-site. Occasionally miscellaneous debris is brought to the site, but it is collected and disposed of off-site as well. The site operates under a Solid Waste Facility License issued by Dakota County. The County inspects the site annually.

b. Facility Permits

- i. CUP issued by City of Inver Grove Heights. Requires renewal and permit application every 5 years.
- ii. Sand and Gravel Overlay Ordinance approval, issued by City of Inver Grove Heights. Requires renewal and permit application every 5 years.
- iii. Water appropriations permit issued by MN DNR. Annual allowance is 42.8 million gallons. BR submits annual reports to show no exceedances.
- iv. National Pollutant Discharge Elimination System permit, MNG490000 issued by MPCA. Discharge monitoring reports (DMR) submitted quarterly to MPCA.
- v. Dakota County Solid Waste Facility License, annual license renewal is required by Dakota County. Site inspected by County annually.
- vi. Aboveground Storage Tank Facility issued by MPCA. Inspection logs submitted annually to the MPCA.

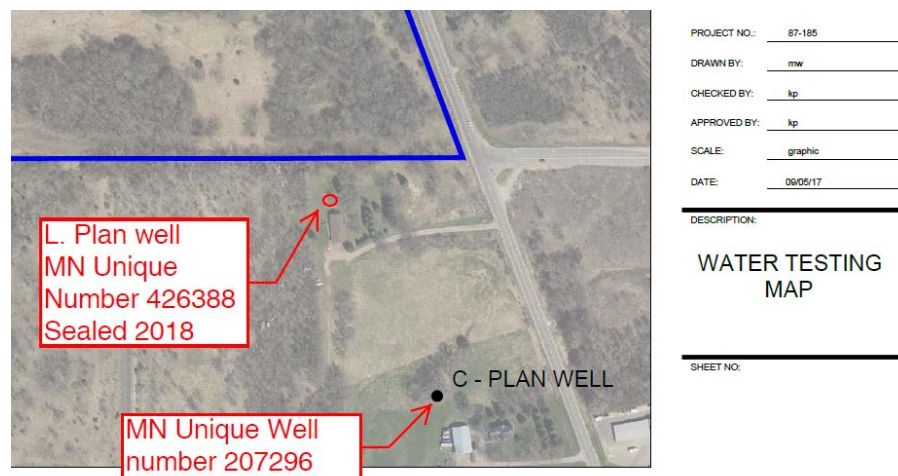
3) *The well water testing reports provided indicate a series of mishandling problems with the water collection protocols used. Several time samples were not collected properly, seals were not intact, Time span from collection did not meet requirements for proper testing. Additionally the amounts of toxic chemicals seem to be increasing over time. The required discrepancy reports have not been made available **Attached is a PDF** indicating the rules that were agreed to in the overlay agreement. I think the city should address who is responsible for monitoring the reports received from BW in the past and what actions, if any, were taken to assure compliance with ordinances and to mediate, protect the groundwater and nearby wells. Can an explanation of what is the responsibility of the RGA (RGU) and who holds this duty in regard to the BR Mine*

- a. **Barr will address.**
- b. **Staff will provide Barr earlier data, prior to 2017. Likely 2012+**
- c. **Staff provided data in the email hyperlink (2017-2022)**
 - i. **Staff noted there's a water testing protocol - private lab.**
 - ii. **Need chain of custody, lab results, who sampled**

- 4) The High Volume industrial well that was installed after much public discussion, was agreed that this well would be placed at a depth of approx 600' below grade drawing water from the tunnel city confined aquifer rather than the proposed 183' that would have put this well in the Prairie du Chien-Jordan unconfined aquifer. PDF Side View elevation of water levels attached, also attached as a PDF is a description of 3 aquifers most impacted.
 - a. Barr will address
 - b. Well log, water drawn limits, water drawn record

Response to Question submitted by Planning Commissioner Robert Heidenreich via email on 11/15/2022:

- 1) We were also provided well water test reports for the required sample testing.
These reports show test results from the *PLAN WELL*
Unique Well ID: 426388
Sample: IGH C-Plan Well Parameters Lab ID: 10573071003 Collected: 08/03/21 13:45
Received: 08/04/21 15:55
Is it possible to test a well that was sealed 3 years prior? SEALED 12-18-2018 BY 1461
 - a. Bituminous Roadways response: BRI tests the Robert Plan well not the Larry Plan well. The Larry Plan well, MN Unique Well Number 426388 is the well that was sealed in 2018. Larry died a number of years ago and his wife, Christine, sold their property to Flint Hills Resources (FHR). The well was sealed by FHR. The lab test report does not show MN Unique Well Numbers for the wells tested. The tested Plan well in the lab report is merely labeled as IGH C-Plan well, which is how it is labeled on the well testing map. The well noted as C-Plan well shown on the well testing map has a MN Unique Well Number of 207296. Below is an excerpt from the Water Testing Map from the 2017 permit renewal with the two Plan wells noted.



- 2) *Here is my concern(s) There are many wells on and around the Bituminous property that are known but not being disclosed in the documents we have all been provided for the permit renewal, One of these wells is located in the foundry sands storage area and isn't listed as sealed.*

➤ *Rech Well Unique well number "1000002687"*

- a. Bituminous Roadways response: The well with Unique well number "1000002687" is an unverified well, which usually means that MDH has not had GPS coordinates shot for the well, identified the well via air photos, and/or the driller's location description on the well log is insufficiently accurate to be included in the database. The address listed on the unverified well log is 1630 52nd St. E. It appears that the log has an incorrect township, range and section, which seems to be why it is shown near the BRI site on the MN Well Index map. There is a well log at that address and is labeled as Peter Rech, MN Unique Well Number 100986.

Excerpt From SPCC Plan : Section 2.5

Spill Prevention Control & Countermeasure Plan
Bituminous Roadways, Inc. – Inver Grove Heights, MN

December 6, 2021

from the spill area into drainage ditches or surface waters;

- Assess the need for and if necessary, call in outside response contractors.
- All but the largest spills will be responded to by Bituminous Roadways personnel. Heavy equipment and sorbent materials are available on-site to respond to oil spills.

Emergency Contacts:	Troy Wille, Emergency Coordinator	Office 651-287-6092
		Cell 612-366-6484
	Koby Fechner Emergency Contact	Cell 612-366-3053
	Todd Smedhammer, Plant Manager	Office 651-686-7001
		Cell 612-366-0013

Emergency Numbers:	Minnesota Duty Officer	800-422-0798
	National Response Center	800-424-8802
	Inver Grove Heights Fire Department	911
	Bay West (Cleanup Contractor)	800-279-0456
	Determan (Cleanup Contractor)	612-347-0534
	Dakota Electric (Transformer Release)	800-430-9722

2.5.1 Safety

Oils and petroleum products are hazardous materials, and personnel must take measures to prevent accidental ignition of any waste materials during spill remedial activities. The following safety requirements shall be strictly enforced by the responder under the direction of the emergency coordinator. All but the largest spills will be responded to by Bituminous Roadways personnel. Heavy equipment and sorbent materials are available on-site to respond to oil spills.

- Personnel shall wear appropriate PPE devices;

Spill Prevention Control & Countermeasure Plan
Bituminous Roadways, Inc. – Inver Grove Heights, MN

December 6, 2021

from the spill area into drainage ditches or surface waters;

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- Personnel shall wear appropriate PPE devices;

Spill Prevention Control & Countermeasure Plan
Bituminous Roadways, Inc. – Inver Grove Heights, MN

December 6, 2021

- Smoking shall be prohibited within 100 feet of the spill-impacted area.
- Ignition sources shall be prohibited in the spill area;
- Spark-producing equipment and tools shall be prohibited from use near spilled materials unless specifically authorized.
- No operations shall be conducted during electrical storms.

2.5.2 Disposal of Recovered Materials

The recovered spilled and containment materials shall be properly disposed of in accordance with local, state and federal regulations.

- Dispersing materials or methods shall not be used unless specifically authorized by the regulatory personnel;
- Free product shall be collected by applying absorbent materials until all free liquids are retained;
- Asphalt product unless heated is not free flowing and will harden if released.
- Soils, absorbents, temporary diking materials, and other debris contaminated during the spill or used to contain a flammable product shall be collected with non-spark-producing tools and placed in containers, which shall be sealed upon filling. Containers shall be labeled "FLAMMABLE";

2.5.3 Reporting

If oil is discharged into or upon the navigable waters of the United States, or adjoining shorelines, or into or upon the waters of the contiguous zone in quantities which violate applicable water quality standards, cause a film or sheen on the U.S. waters or adjoining shorelines, or cause a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines, then the Facility shall.

Carlson McCain, Inc.

Page 11

Spill Prevention Control & Countermeasure Plan
Bituminous Roadways, Inc. – Inver Grove Heights, MN

December 6, 2021

1. Notify the National Response Center by telephone by 800-424-8802 (24 hours a day/7-days a week) of the discharge.
2. Notify the State Duty Officer, 800-422-0798.
3. Notify the USEPA Region V Spill Phone, (312) 353-2318.
4. The verbal notification report will include the following information regarding the spill:
 - a. The location, time and date.
 - b. The material and quantity.
 - c. Name of stream involved.
 - d. The company name, address, and phone numbers and/or responsible party.
 - e. The spill reporter's name, address, and phone number.
 - f. Action taken and disposal site.
 - g. Secondary problems (i.e., water supply affected, fish kill, excavation, etc.).

2.5.4 Spill Incident Mitigated On-Site

The following notification and reporting procedures are followed in the event of an incident which is mitigated on-site without implementation of the SPCC Plan:

- The employee who identifies the spill shall notify the Emergency Coordinator of the spill incident;
- A determination will be made by the Emergency Coordinator as to whether the incident is reportable; and
- If the spill is either reportable or non-reportable to State and Federal Agencies, a report documenting the incident will be maintained at the facility by the Emergency Coordinator, Troy Wille

2.5.5 Record Keeping Requirements

Carlson McCain, Inc.

Page 12



CONSULTANTS
• ENVIRONMENTAL
• GEOTECHNICAL
• MATERIALS
• FORENSICS

August 25, 2006

Bituminous Roadways
9050 Jefferson Trail
Inver Grove Heights, MN 55077

Attn: Mr. Dusty Ordorff

RE: Environmental Testing Services
Bituminous Roadways Asphalt Plant
Rich Valley Boulevard
Rosemount, Minnesota
AET Project #03-02711

Dear Mr. Ordorff:

American Engineering Testing, Inc. (AET) has completed our environmental testing services for the above-referenced site in Rosemount, Minnesota. Our methods and results are summarized below.

Background and Purpose

AET was contacted on August 9, 2006 to perform soil sampling of a mixed soil stockpile on the above referenced site. The purpose of our services was to determine if contamination was present in the soil after foundry sand was mixed with native sand. The laboratory analytical results were compared to the Minnesota Pollution Control Agency (MPCA) Tier I Residential Soil Reference Values (SRVs) and Soil Leaching Values (SLVs).

Soil Sampling Procedures

Soil sampling activities were performed by an AET geologist. Soil samples collected were screened with a photoionization detector (PID) for the presence of organic vapors with ionization potentials less than the lamp voltage. The PID was calibrated for direct reading in parts-per-million-volume (PPMv) of a benzene equivalent. Soil samples were collected and screened according to the bag-headspace field screening procedure, which consists of placing freshly collected soil into a polyethylene Whirl-Pak or freezer baggie (i.e., bag), sealing the bag to contain an air pocket (i.e., headspace), and allowing 10 to 20 minutes for vapors to disperse from the soil to the headspace. Excessive moisture, temperature extremes, ambient vapors, or other unusual field circumstances can affect screening results.

This document shall not be reproduced, except in full, without written approval of American Engineering Testing, Inc.

550 Cleveland Avenue North • St. Paul, MN 55114

Phone 651-659-9001 • Toll Free 800-972-6364 • Fax 651-659-1379 • www.amengtest.com

Offices throughout Florida, Minnesota, South Dakota & Wisconsin
AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

Soil samples obtained for chemical analysis were collected into laboratory-prepared containers with appropriate preservatives, according to laboratory protocols. The samples were delivered to the analytical laboratory within prescribed holding times, accompanied by proper chain-of-custody forms.

Results

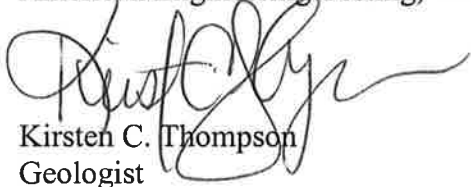
AET collected one soil sample on August 9, 2006. It was collected from a pile in the center of the site containing mixed materials identified as foundry sand mixed with natural sand at a 1:9 ratio, respectively.

The soil samples were field screened using a PID. No detections were noted while screening with the PID. The samples were submitted to Legend Technical Services (Legend), Inc. for laboratory analysis of diesel range organics (DRO), volatile organic compounds (VOCs), 8 Resource Conservation and Recovery Act (RCRA) Metals and polyaromatic hydrocarbons (PAHs). All of the concentrations measured were either non-detect or below Tier I Residential SRVs and SLVs. The lab report is attached.

Remarks

We appreciate the opportunity to have been of service to you on this project. If you have any questions regarding the information presented in this letter, or if we can be of additional service, please contact me at.

Prepared by,
American Engineering Testing, Inc.


Kirsten C. Thompson
Geologist

Phone: (651) 659-1332
Fax: (651) 659-1370
Email: kthompson@amengtest.com

Reviewed by,
American Engineering Testing, Inc.


Kathryn J. Kleiter, P.G.
Principal Hydrogeologist

Phone: (651) 659-1319
Fax: (651) 659-1379
Email: kkleiter@amengtest.com

Attachments:

Legend Laboratory Report



88 Empire Drive
St Paul, MN 55103
Tel: 651.642.1150
Fax: 651.642.1239

August 22, 2006

Ms. Kirsten Thompson
American Engineering Testing, Inc.
550 Cleveland Ave N
St. Paul, MN 55114

Reviewed by: KAT
Date: 8/24/06

Work Order Number: 0603624
RE: 03-02711 Bituminous Roadway

Enclosed are the results of analyses for samples received by the laboratory on 08/09/06. If you have any questions concerning this report, please feel free to contact me.

All samples will be retained by LEGEND, unless consumed in the analysis, for 30 days from the date of this report and then discarded unless other arrangements are made.

Minnesota Certification # 027-123-295

Prepared by,
LEGEND TECHNICAL SERVICES, INC

Terri Olson
Terri Olson
Project Manager
tolson@legend-group.com

Shanna Miller
Shanna Miller
Client Representative
smiller@legend-group.com



88 Empire Drive
St Paul, MN 55103
651.642.1150

American Engineering Testing, Inc.
550 Cleveland Ave N
St. Paul MN, 55114

Project: 03-02711 Bituminous Roadway
Project Number: 03-02711
Project Manager: Ms. Kirsten Thompson

Date Reported:
August 22, 2006

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Blended	0603624-01	Soil	08/09/06 00:00	08/09/06 12:18

Shipping container information

Default Cooler

Temperature:

Received on ice: Yes
Received on melt water: No
Custody seals: No

Temperature blank was not present
Ambient: No

Received on blue ice: No
Acceptable (IH/ISO only): No

Case Narrative:



88 Empire Drive
St Paul, MN 55103
651.642.1150

American Engineering Testing, Inc.
550 Cleveland Ave N
St. Paul MN, 55114

Project: 03-02711 Bituminous Roadway
Project Number: 03-02711
Project Manager: Ms. Kirsten Thompson

Date Reported:
August 22, 2006

DRO/8015B
Legend Technical Services, Inc

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Blended (0603624-01) Soil Received: 08/09/06 12:18 Sampled: 08/09/06 00:00											
Diesel Range Organics	<10	10	2.3		mg/kg dry	1	B6H2105	08/21/06	08/21/06	Wisc Mod DRO	
Surrogate: C-30	107				67.6-130	%	"	"	"	"	



88 Empire Drive
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American Engineering Testing, Inc.
550 Cleveland Ave N
St. Paul MN, 55114

Project: 03-02711 Bituminous Roadway
Project Number: 03-02711
Project Manager: Ms. Kirsten Thompson

Date Reported:
August 22, 2006

TOTAL METALS ANALYSIS
Legend Technical Services, Inc

Analyte	Reporting			Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit	MDL							
Blended (0603624-01) Soil Received: 08/09/06 12:18 Sampled: 08/09/06 00:00										
Mercury	<0.10	0.10	0.0030	mg/kg dry	1	B6H1605	08/16/06	08/16/06	EPA 7471A	
Arsenic	1.5	0.52	0.089	mg/kg dry	1	B6H1603	08/16/06	08/16/06	EPA 6010B	
Barium	13	1.0	0.15	mg/kg dry	1	"	"	"	"	
Cadmium	<0.26	0.26	0.078	mg/kg dry	1	"	"	"	"	
Chromium	9.0	0.52	0.021	mg/kg dry	1	"	"	"	"	
Lead	2.6	1.0	0.027	mg/kg dry	1	"	"	"	"	
Selenium	<1.0	1.0	0.10	mg/kg dry	1	"	"	"	"	
Silver	<0.26	0.26	0.019	mg/kg dry	1	"	"	"	"	



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651.642.1150

American Engineering Testing, Inc.
550 Cleveland Ave N
St. Paul MN, 55114

Project: 03-02711 Bituminous Roadway
Project Number: 03-02711
Project Manager: Ms. Kirsten Thompson

Date Reported:
August 22, 2006

PAH 8270C
Legend Technical Services, Inc

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Blended (0603624-01) Soil Received: 08/09/06 12:18 Sampled: 08/09/06 00:00										
BaP Equivalents	0.0			mg/kg dry	1	[CALC]	08/10/06	08/10/06	Calculation	
2-Chloronaphthalene	<0.43	0.43	0.044	mg/kg dry	1	B6H1003	"	"	EPA 8270C	
2-Methylnaphthalene	<0.43	0.43	0.10	mg/kg dry	1	"	"	"	"	
Acenaphthene	<0.43	0.43	0.069	mg/kg dry	1	"	"	"	"	
Acenaphthylene	<0.43	0.43	0.044	mg/kg dry	1	"	"	"	"	
Anthracene	<0.43	0.43	0.048	mg/kg dry	1	"	"	"	"	
Benzo (a) anthracene	<0.43	0.43	0.091	mg/kg dry	1	"	"	"	"	
Benzo (a) pyrene	<0.43	0.43	0.056	mg/kg dry	1	"	"	"	"	
Benzo (b) fluoranthene	<0.43	0.43	0.050	mg/kg dry	1	"	"	"	"	
Benzo (g,h,i) perylene	<0.43	0.43	0.066	mg/kg dry	1	"	"	"	"	
Benzo (k) fluoranthene	<0.43	0.43	0.061	mg/kg dry	1	"	"	"	"	
Chrysene	<0.43	0.43	0.095	mg/kg dry	1	"	"	"	"	
Dibenz (a,h) anthracene	<0.43	0.43	0.061	mg/kg dry	1	"	"	"	"	
Fluoranthene	<0.43	0.43	0.091	mg/kg dry	1	"	"	"	"	
Fluorene	<0.43	0.43	0.076	mg/kg dry	1	"	"	"	"	
Indeno (1,2,3-cd) pyrene	<0.43	0.43	0.061	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.43	0.43	0.043	mg/kg dry	1	"	"	"	"	
Phenanthrene	<0.43	0.43	0.047	mg/kg dry	1	"	"	"	"	
Pyrene	<0.43	0.43	0.095	mg/kg dry	1	"	"	"	"	
Surrogate: 2-Fluorobiphenyl	67.3			50.8-85.9	%	"	"	"	"	
Surrogate: Nitrobenzene-d5	68.4			49.2-95.3	%	"	"	"	"	
Surrogate: Terphenyl-d14	88.5			61.6-90.8	%	"	"	"	"	

LEGEND

Technical Services, Inc.

88 Empire Drive
St Paul, MN 55103
651.642.1150

American Engineering Testing, Inc.
550 Cleveland Ave N
St. Paul MN, 55114

Project: 03-02711 Bituminous Roadway
Project Number: 03-02711
Project Manager: Ms. Kirsten Thompson

Date Reported:
August 22, 2006

VOC GCMS 8260B Legend Technical Services, Inc

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Blended (0603624-01) Soil Received: 08/09/06 12:18 Sampled: 08/09/06 00:00										
1,1,1,2-Tetrachloroethane	<0.26	0.26	0.045	mg/kg dry	1	B6H1013	08/10/06	08/10/06	EPA 8260B	
1,1,1-Trichloroethane	<0.26	0.26	0.034	mg/kg dry	1	"	"	"	"	
1,1,2,2-Tetrachloroethane	<0.26	0.26	0.020	mg/kg dry	1	"	"	"	"	
1,1,2-Trichloroethane	<0.26	0.26	0.058	mg/kg dry	1	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	<0.26	0.26	0.066	mg/kg dry	1	"	"	"	"	
1,1-Dichloroethane	<0.26	0.26	0.052	mg/kg dry	1	"	"	"	"	
1,1-Dichloroethene	<0.26	0.26	0.055	mg/kg dry	1	"	"	"	"	
1,1-Dichloropropene	<0.26	0.26	0.045	mg/kg dry	1	"	"	"	"	
1,2,3-Trichlorobenzene	<0.52	0.52	0.50	mg/kg dry	1	"	"	"	"	
1,2,3-Trichloropropane	<0.26	0.26	0.044	mg/kg dry	1	"	"	"	"	
1,2,4-Trichlorobenzene	<0.52	0.52	0.049	mg/kg dry	1	"	"	"	"	
1,2,4-Trimethylbenzene	<0.26	0.26	0.017	mg/kg dry	1	"	"	"	"	
1,2-Dibromo-3-chloropropane	<0.52	0.52	0.12	mg/kg dry	1	"	"	"	"	
1,2-Dibromoethane (EDB)	<0.26	0.26	0.050	mg/kg dry	1	"	"	"	"	
1,2-Dichlorobenzene	<0.26	0.26	0.017	mg/kg dry	1	"	"	"	"	
1,2-Dichloroethane	<0.26	0.26	0.061	mg/kg dry	1	"	"	"	"	
1,2-Dichloropropane	<0.26	0.26	0.046	mg/kg dry	1	"	"	"	"	
1,3,5-Trimethylbenzene	<0.26	0.26	0.025	mg/kg dry	1	"	"	"	"	
1,3-Dichlorobenzene	<0.26	0.26	0.029	mg/kg dry	1	"	"	"	"	
1,3-Dichloropropane	<0.26	0.26	0.044	mg/kg dry	1	"	"	"	"	
1,4-Dichlorobenzene	<0.26	0.26	0.038	mg/kg dry	1	"	"	"	"	
2,2-Dichloropropane	<0.52	0.52	0.066	mg/kg dry	1	"	"	"	"	
2-Butanone	<2.1	2.1	0.19	mg/kg dry	1	"	"	"	"	

Legend Technical Services, Inc

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LEGEND

Technical Services, Inc.

88 Empire Drive
St Paul, MN 55103
651.642.1150

American Engineering Testing, Inc.
550 Cleveland Ave N
St. Paul MN, 55114

Project: 03-02711 Bituminous Roadway
Project Number: 03-02711
Project Manager: Ms. Kirsten Thompson

Date Reported:
August 22, 2006

VOC GCMS 8260B Legend Technical Services, Inc

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Blended (0603624-01) Soil Received: 08/09/06 12:18 Sampled: 08/09/06 00:00										
2-Chlorotoluene	<0.26	0.26	0.050	mg/kg dry	1	B6H1013	08/10/06	08/10/06	EPA 8260B	
4-Chlorotoluene	<0.26	0.26	0.024	mg/kg dry	1	"	"	"	"	
Acetone	<2.1	2.1	0.17	mg/kg dry	1	"	"	"	"	
Allyl chloride	<0.52	0.52	0.045	mg/kg dry	1	"	"	"	"	
Benzene	<0.26	0.26	0.020	mg/kg dry	1	"	"	"	"	
Bromobenzene	<0.26	0.26	0.028	mg/kg dry	1	"	"	"	"	
Bromochloromethane	<0.26	0.26	0.054	mg/kg dry	1	"	"	"	"	
Bromodichloromethane	<0.26	0.26	0.056	mg/kg dry	1	"	"	"	"	
Bromoform	<0.52	0.52	0.057	mg/kg dry	1	"	"	"	"	
Bromomethane	<0.52	0.52	0.15	mg/kg dry	1	"	"	"	"	
Carbon tetrachloride	<0.26	0.26	0.070	mg/kg dry	1	"	"	"	"	
Chlorobenzene	<0.26	0.26	0.040	mg/kg dry	1	"	"	"	"	
Chloroethane	<2.6	2.6	0.36	mg/kg dry	1	"	"	"	"	
Chloroform	<0.26	0.26	0.042	mg/kg dry	1	"	"	"	"	
Chloromethane	<0.26	0.26	0.056	mg/kg dry	1	"	"	"	"	
cis-1,2-Dichloroethene	<0.26	0.26	0.054	mg/kg dry	1	"	"	"	"	
cis-1,3-Dichloropropene	<0.26	0.26	0.035	mg/kg dry	1	"	"	"	"	
Dibromochloromethane	<0.26	0.26	0.055	mg/kg dry	1	"	"	"	"	
Dibromomethane	<0.26	0.26	0.058	mg/kg dry	1	"	"	"	"	
Dichlorodifluoromethane	<0.52	0.52	0.053	mg/kg dry	1	"	"	"	"	
Dichlorofluoromethane	<0.26	0.26	0.047	mg/kg dry	1	"	"	"	"	
Ethyl ether	<0.52	0.52	0.060	mg/kg dry	1	"	"	"	"	
Ethylbenzene	<0.26	0.26	0.035	mg/kg dry	1	"	"	"	"	

Legend Technical Services, Inc

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



88 Empire Drive
St Paul, MN 55103
651.642.1150

American Engineering Testing, Inc.
550 Cleveland Ave N
St. Paul MN, 55114

Project: 03-02711 Bituminous Roadway
Project Number: 03-02711
Project Manager: Ms. Kirsten Thompson

Date Reported:
August 22, 2006

VOC GCMS 8260B
Legend Technical Services, Inc

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Blended (0603624-01) Soil Received: 08/09/06 12:18 Sampled: 08/09/06 00:00										
Hexachlorobutadiene	<1.0	1.0	0.14	mg/kg dry	1	B6H1013	08/10/06	08/10/06	EPA 8260B	
Isopropylbenzene	<0.26	0.26	0.033	mg/kg dry	1	"	"	"	"	
m,p-Xylene	<0.52	0.52	0.031	mg/kg dry	1	"	"	"	"	
Methyl isobutyl ketone	<0.52	0.52	0.15	mg/kg dry	1	"	"	"	"	
Methyl tert-butyl ether	<0.26	0.26	0.040	mg/kg dry	1	"	"	"	"	
Methylene chloride	<1.0	1.0	0.054	mg/kg dry	1	"	"	"	"	
Naphthalene	<0.52	0.52	0.017	mg/kg dry	1	"	"	"	"	
n-Butylbenzene	<0.26	0.26	0.041	mg/kg dry	1	"	"	"	"	
n-Propylbenzene	<0.26	0.26	0.026	mg/kg dry	1	"	"	"	"	
o-Xylene	<0.26	0.26	0.071	mg/kg dry	1	"	"	"	"	
p-Isopropyltoluene	<0.26	0.26	0.036	mg/kg dry	1	"	"	"	"	
sec-Butylbenzene	<0.26	0.26	0.010	mg/kg dry	1	"	"	"	"	
Styrene	<0.26	0.26	0.030	mg/kg dry	1	"	"	"	"	
tert-Butylbenzene	<0.26	0.26	0.034	mg/kg dry	1	"	"	"	"	
Tetrachloroethene	<0.26	0.26	0.058	mg/kg dry	1	"	"	"	"	
Tetrahydrofuran	<2.1	2.1	0.14	mg/kg dry	1	"	"	"	"	
Toluene	<0.26	0.26	0.019	mg/kg dry	1	"	"	"	"	
trans-1,2-Dichloroethene	<0.26	0.26	0.034	mg/kg dry	1	"	"	"	"	
trans-1,3-Dichloropropene	<0.26	0.26	0.050	mg/kg dry	1	"	"	"	"	
Trichloroethene	<0.26	0.26	0.045	mg/kg dry	1	"	"	"	"	
Trichlorofluoromethane	<0.26	0.26	0.053	mg/kg dry	1	"	"	"	"	
Vinyl chloride	<0.26	0.26	0.040	mg/kg dry	1	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	126			78.3-121	%	"	"	"	"	S-GC

Legend Technical Services, Inc

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Project Manager: Ms. Kirsten Thompson

Date Reported:
August 22, 2006

VOC GCMS 8260B
Legend Technical Services, Inc

Analyte	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Result	Limit								
Blended (0603624-01) Soil Received: 08/09/06 12:18 Sampled: 08/09/06 00:00										
Surrogate: Dibromofluoromethane	111			78.1-120 %		B6H1013	08/10/06	08/10/06	EPA 8260B	
Surrogate: Toluene-d8	111			77.2-120 %		"	"	"	"	



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Date Reported:
August 22, 2006

DRO/8015B - Quality Control
Legend Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
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Batch B6H2105 - Sonication (Wisc DRO)

Blank (B6H2105-BLK1)

Prepared & Analyzed: 08/21/06

Diesel Range Organics

<10

10 mg/kg wet

Surrogate: C-30

13.9

mg/kg wet 16.0

86.9 67.6-130



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Project Manager: Ms. Kirsten Thompson

Date Reported:
August 22, 2006

TOTAL METALS ANALYSIS - Quality Control
Legend Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	%RPD Limit	Notes
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Batch B6H1603 - EPA 3050B

Blank (B6H1603-BLK1)

Prepared: 08/16/06 Analyzed: 08/17/06

Arsenic	<0.50	0.50	mg/kg wet					
Barium	<1.0	1.0	mg/kg wet					
Cadmium	<0.25	0.25	mg/kg wet					
Chromium	<0.50	0.50	mg/kg wet					
Lead	<1.0	1.0	mg/kg wet					
Selenium	<1.0	1.0	mg/kg wet					
Silver	<0.25	0.25	mg/kg wet					



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Date Reported:
August 22, 2006

Batch B6H1605 - EPA 7471A

Blank (B6H1605-BLK1)

Prepared & Analyzed: 08/16/06

Mercury

<0.10

0.10 mg/kg wet



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Date Reported:
August 22, 2006

PAH 8270C - Quality Control Legend Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
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Batch B6H1003 - EPA 3545 ASE Extraction

Blank (B6H1003-BLK1)

Prepared & Analyzed: 08/10/06

2-Chloronaphthalene	<0.33	0.33	mg/kg wet							
2-Methylnaphthalene	<0.33	0.33	mg/kg wet							
Acenaphthene	<0.33	0.33	mg/kg wet							
Acenaphthylene	<0.33	0.33	mg/kg wet							
Anthracene	<0.33	0.33	mg/kg wet							
Benzo (a) anthracene	<0.33	0.33	mg/kg wet							
Benzo (a) pyrene	<0.33	0.33	mg/kg wet							
Benzo (b) fluoranthene	<0.33	0.33	mg/kg wet							
Benzo (g,h,i) perylene	<0.33	0.33	mg/kg wet							
Benzo (k) fluoranthene	<0.33	0.33	mg/kg wet							
Chrysene	<0.33	0.33	mg/kg wet							
Dibenz (a,h) anthracene	<0.33	0.33	mg/kg wet							
Fluoranthene	<0.33	0.33	mg/kg wet							
Fluorene	<0.33	0.33	mg/kg wet							
Indeno (1,2,3-cd) pyrene	<0.33	0.33	mg/kg wet							
Naphthalene	<0.33	0.33	mg/kg wet							
Phenanthrene	<0.33	0.33	mg/kg wet							
Pyrene	<0.33	0.33	mg/kg wet							
Surrogate: 2-Fluorobiphenyl	4.33		mg/kg wet	6.67		64.9	50.8-85.9			
Surrogate: Nitrobenzene-d5	4.34		mg/kg wet	6.67		65.1	49.2-95.3			
Surrogate: Terphenyl-d14	5.35		mg/kg wet	6.67		80.2	61.6-90.8			



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VOC GCMS 8260B - Quality Control

Legend Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	%RPD Limit	Notes
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Batch B6H1013 - Volatiles

Blank (B6H1013-BLK1)

Prepared & Analyzed: 08/10/06

1,1,1,2-Tetrachloroethane	<0.25	0.25	mg/kg wet
1,1,1-Trichloroethane	<0.25	0.25	mg/kg wet
1,1,2,2-Tetrachloroethane	<0.25	0.25	mg/kg wet
1,1,2-Trichloroethane	<0.25	0.25	mg/kg wet
1,1,2-Trichlorotrifluoroethane	<0.25	0.25	mg/kg wet
1,1-Dichloroethane	<0.25	0.25	mg/kg wet
1,1-Dichloroethene	<0.25	0.25	mg/kg wet
1,1-Dichloropropene	<0.25	0.25	mg/kg wet
1,2,3-Trichlorobenzene	<0.50	0.50	mg/kg wet
1,2,3-Trichloropropane	<0.25	0.25	mg/kg wet
1,2,4-Trichlorobenzene	<0.50	0.50	mg/kg wet
1,2,4-Trimethylbenzene	<0.25	0.25	mg/kg wet
1,2-Dibromo-3-chloropropane	<0.50	0.50	mg/kg wet
1,2-Dibromoethane (EDB)	<0.25	0.25	mg/kg wet
1,2-Dichlorobenzene	<0.25	0.25	mg/kg wet
1,2-Dichloroethane	<0.25	0.25	mg/kg wet
1,2-Dichloropropane	<0.25	0.25	mg/kg wet
1,3,5-Trimethylbenzene	<0.25	0.25	mg/kg wet
1,3-Dichlorobenzene	<0.25	0.25	mg/kg wet
1,3-Dichloropropane	<0.25	0.25	mg/kg wet
1,4-Dichlorobenzene	<0.25	0.25	mg/kg wet
2,2-Dichloropropane	<0.50	0.50	mg/kg wet
2-Butanone	<2.0	2.0	mg/kg wet
2-Chlorotoluene	<0.25	0.25	mg/kg wet
4-Chlorotoluene	<0.25	0.25	mg/kg wet
Acetone	<2.0	2.0	mg/kg wet
Allyl chloride	<0.50	0.50	mg/kg wet
Benzene	<0.25	0.25	mg/kg wet
Bromobenzene	<0.25	0.25	mg/kg wet
Bromochloromethane	<0.25	0.25	mg/kg wet
Bromodichloromethane	<0.25	0.25	mg/kg wet



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VOC GCMS 8260B - Quality Control

Legend Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
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Batch B6H1013 - Volatiles

Blank (B6H1013-BLK1)

Prepared & Analyzed: 08/10/06

Bromoform	<0.50	0.50	mg/kg wet
Bromomethane	<0.50	0.50	mg/kg wet
Carbon tetrachloride	<0.25	0.25	mg/kg wet
Chlorobenzene	<0.25	0.25	mg/kg wet
Chloroethane	<2.5	2.5	mg/kg wet
Chloroform	<0.25	0.25	mg/kg wet
Chloromethane	<0.25	0.25	mg/kg wet
cis-1,2-Dichloroethene	<0.25	0.25	mg/kg wet
cis-1,3-Dichloropropene	<0.25	0.25	mg/kg wet
Dibromochloromethane	<0.25	0.25	mg/kg wet
Dibromomethane	<0.25	0.25	mg/kg wet
Dichlorodifluoromethane	<0.50	0.50	mg/kg wet
Dichlorofluoromethane	<0.25	0.25	mg/kg wet
Ethyl ether	<0.50	0.50	mg/kg wet
Ethylbenzene	<0.25	0.25	mg/kg wet
Hexachlorobutadiene	<1.0	1.0	mg/kg wet
Isopropylbenzene	<0.25	0.25	mg/kg wet
m,p-Xylene	<0.50	0.50	mg/kg wet
Methyl isobutyl ketone	<0.50	0.50	mg/kg wet
Methyl tert-butyl ether	<0.25	0.25	mg/kg wet
Methylene chloride	<1.0	1.0	mg/kg wet
Naphthalene	<0.50	0.50	mg/kg wet
n-Butylbenzene	<0.25	0.25	mg/kg wet
n-Propylbenzene	<0.25	0.25	mg/kg wet
o-Xylene	<0.25	0.25	mg/kg wet
p-Isopropyltoluene	<0.25	0.25	mg/kg wet
sec-Butylbenzene	<0.25	0.25	mg/kg wet
Styrene	<0.25	0.25	mg/kg wet
tert-Butylbenzene	<0.25	0.25	mg/kg wet
Tetrachloroethene	<0.25	0.25	mg/kg wet
Tetrahydrofuran	<2.0	2.0	mg/kg wet



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VOC GCMS 8260B - Quality Control
Legend Technical Services, Inc

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	%RPD	%RPD Limit	Notes
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Batch B6H1013 - Volatiles

Blank (B6H1013-BLK1)

Prepared & Analyzed: 08/10/06

Toluene	<0.25	0.25	mg/kg wet							
trans-1,2-Dichloroethene	<0.25	0.25	mg/kg wet							
trans-1,3-Dichloropropene	<0.25	0.25	mg/kg wet							
Trichloroethene	<0.25	0.25	mg/kg wet							
Trichlorofluoromethane	<0.25	0.25	mg/kg wet							
Vinyl chloride	<0.25	0.25	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	66.0		ug/L	61.0		108	78.3-121			
Surrogate: Dibromofluoromethane	67.2		ug/L	61.0		110	78.1-120			
Surrogate: Toluene-d8	66.5		ug/L	61.0		109	77.2-120			



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Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

< Less than value listed

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference



☒ St. Paul Office
550 Cleveland Ave. N.
St. Paul, MN 55114
651-659-9001
651-659-1379 (fax)

☐ Duluth Office

☐ Rapid City Office

☐ Mankato Office ☐ Marshall Office ☐ Pierre Office
☐ Rochester Office ☐ Sioux Falls Office ☐ Wausau Office

9685

ADDRESS:

#0603624

PAGE / OF

AET JOB NUMBER 03-02711
 JOB NAME/LOCATION Bituminous Roadway
 AET PROJECT MANAGER Kirsten Thompson
 SEND REPORT TO K. Thompson

SAMPLED BY (PRINT):

SAMPLER SEQUENCE

REQUESTED TURNAROUND TIME:

DATE NEEDED BY:

☒	NORMAL	☐	RUSH
-------------------------------------	--------	--------------------------	------

天

ITEM#	SAMPLE DESCRIPTION	DATE	TIME	SAMPLE TYPE
1	Blended	8/9	-	507

PRESERVATIVES		FIELD FILTERED Y/N
UNPRESERVED	MeOH	
	HCL	
	H ₂ SO ₄	
	HNO ₃	

REMARKS

ANALYSIS

YSIS

1

NOTE:

no hard plan to go back

RELINQUISHED BY/AFFILIATION	ACCEPTED BY/AFFILIATION
<i>[Signature]</i>	<i>[Signature]</i>

TIME

8/9/06

located within the City's regulatory authority. Bituminous Roadways shall post an advisory to all drivers to the same effect at exits from the site.

12. The site shall be kept clear, at all times, of windblown debris.
13. The foundry sand in the northwest berm shall remain in its current location except as it is used. It is to be used in its entirety within the next five years. The foundry sand in the southeast berm will be left undisturbed.
14. Bituminous Roadways shall bring no additional foundry sand onto the site.
15. The berms which cover the foundry sand shall be maintained in vegetative cover to control erosion of the foundry sand.
16. The stockpiled MOSS, shingle scrap, recycled asphalt, and concrete pavement will not be disposed at the site.
17. Stock piles of recycled asphalt, MOSS, shingles, and concrete shall be limited in size to amount that will be used that year.
18. Backfill material shall be either clean fill material that was stripped off the site or other clean fill material which is brought in from offsite.
19. Spent bag house bags will be disposed of in a lined landfill permitted or approved to accept such materials.
20. A restoration bond shall be in an amount to cover the costs of restoration of the site, as determined by the City Engineer, prior to City Council approval.
21. An annual Excavation Permit shall be required to be obtained for the operation.
22. Bituminous Roadways shall obtain and maintain the necessary licenses and approvals from Dakota County. Terms and conditions of the license and approval shall be hereby incorporated into this City approval.
23. Bituminous Roadways shall obtain and maintain the necessary Minnesota Pollution Control Agency permits including two air quality permits and one industrial storm water permit. The terms and conditions of those permits shall be hereby incorporated into this City approval.
24. All reports which are required to be submitted to Dakota County under the two Hazardous Waste Generators License and the one Processing License shall also be submitted to the City, including the required annual and quarterly reports.
25. All reports which are required to be submitted to the Minnesota Pollution Control Agency shall also be submitted to the City, including annual emissions inventory report, semi-annual deviations report, annual compliance certification report, and annual report.

**Bituminous Roadways, Inc.
Final Question/Answer Report**

**Prepared for
City of Inver Grove Heights**

by

Barr Engineering Company

dated

September 10, 1999

Q. 1. The groundwater level elevation for the site is reported from the Geologic Atlas of Dakota County. Is data available for the water level in the water supply well on the eastern portion of the site?

A. 1. The records for the wells installed in the pit in 1980 and on the east side of the site in 1998 indicates that groundwater elevation was measured at approximately 800 feet above mean sea level (M.S.L.) in both wells. This correlates reasonably well with the information that Barr obtained from the Geologic Atlas of Dakota County which indicates that groundwater elevation at the site is between 800 and 850 feet above M.S.L. The Geologic Atlas of Dakota County also indicates that groundwater flow at the site is eastward toward the Mississippi River and has a gradient (slope) of 0.02 feet per foot (2 feet per 100 feet).

For comparison purposes, the bottom of the sand and gravel mining operation at the site is at an elevation of approximately 850 feet above M.S.L. Therefore, available information indicates that the groundwater flow is east towards the Mississippi River and that groundwater elevation at the site is within approximately 50 feet of the current bottom of the sand and gravel pit.

Q. 2. Were leach tests performed on the foundry sand in the berms on the northwest and southeast sides of the pit?

A. 2. Bituminous Roadways Inc. (Bituminous Roadways) blends the foundry sand with rubble concrete at a ratio of 1: 10 (foundry sand : concrete). The blend is crushed and utilized as roadbase aggregate. Bituminous Roadways does not use foundry sand as an ingredient in the hot mix asphalt it produces. Bituminous Roadways indicates that foundry sand was last brought to the site in 1996 and that there is currently approximately 25,000 to 30,000 cubic yards of foundry sand at the site. Almost all of the foundry sand at

the site is in the northwest berm. Bituminous Roadways estimates that only approximately 24 cubic yards of foundry sand is contained in the southeast berm.

Bituminous Roadways estimates that all of the foundry sand in the northwest berm will be utilized within the next 5 to 6 years. Bituminous Roadways has no plans to bring in additional foundry sand to the site.

Testing of the foundry sand brought to the site was conducted periodically for many years. These tests results are on file at Bituminous Roadways. Barr has reviewed the most recent of these test results (conducted in 1997) from the two foundries which indicate that the foundry sand is below hazardous waste levels.

Additionally, in 1998 four samples were collected from the foundry sand berm located at the northwest portion of the site under the direction of Dakota County staff (no samples were collected from the southeast berm because of the small quantity of foundry sand in the berm). These four samples were analyzed by Braun Intertec, Inc. for eight metals using the toxicity characteristics leaching procedure (TCLP). The results of this testing indicated that the material was below hazardous waste levels.

Q. 3. Were the leach tests adequately conducted on the foundry sand? Are the results below hazardous waste limits? Does the foundry sand pose a threat to human health or the environment? Is the vegetative cover on the foundry sand stockpile adequate?

A. 3. The contaminants of concern in foundry sand vary depending upon the processes that are used at the foundry. Potential contaminants of concern in foundry sand typically include heavy metals and phenols. The processes that can influence the characteristics of the foundry sand are the type of metal being poured (iron, steel, aluminum, brass/bronze), the type of casting process (sand casting, investment casting), the type of furnace (induction, electric arc, cupola) and the type of finishing process (grinding, blast, cleaning, coating). The foundry sand at the site came from two Minneapolis foundries (Smith and Prospect Foundries). These two foundries both pour iron, use sand casting, have electric induction furnaces and perform finish grading. Published information was not researched regarding the expected characteristics of foundry sands from foundries such as these because direct measurements can be obtained through testing of the foundry sand at the site.

Barr has reviewed the four TCLP test results from samples collected from the foundry sand in the northwest berm in 1998. Bituminous Roadways has indicated that all of the four samples were collected from the northwest foundry sand berm and that no samples were collected from the southeast berm.

However, Bituminous Roadways also indicated that only a very small amount of foundry sand is contained

in the southeast berm. The four samples were collected by Braun Intertec staff under the direction of Dakota County staff on-site. Braun Intertec performed the analysis. Barr has reviewed the data and data quality information (analytical method, holding times, matrix spikes) for these four samples and have concluded that the test results are accurate.

The test results indicate that the foundry sand is below the TCLP criteria used to determine whether the material is a characteristic hazardous waste for metals. However, there are numerous wastes in Minnesota that are not classified as hazardous but still are required to be disposed of in a lined landfill because they contain other constituents of concern. For example, there are potentially additional metals of concern in foundry sand (namely copper, nickel and zinc) than were analyzed for in the above referenced four TCLP tests.

The TCLP test results from the northwest stockpile indicate the foundry sand is not hazardous but sometimes contains cadmium measured at a concentration above the drinking water standard. Therefore, although Barr believes that it is unlikely that the foundry sand has adversely affected groundwater at the site, Barr recommends that the two site wells be tested as discussed in answer #5 below.

Barr observed the vegetative cover on the northwest foundry sand berm during the site visit conducted on May 20, 1999. Most of the berm surface was adequately vegetated; however, there were a few areas where minor erosion had occurred. Barr recommends that these areas be regraded and reseeded as soon as possible in 1999.

Q. 4. Should the foundry sand stockpile be limited as to its size and location?

A. 4. Foundry sand brought to the site was not used in asphalt production as fast as it was brought in. All of the foundry sand not used in asphalt production has been temporarily stored in a stockpile on the northwest portion of the site except for approximately 24 cubic yards contained in the southeast berm. Bituminous Roadways plans to utilize all of the stockpiled foundry sand from the northwest berm within 5 to 6 years. Barr observed no problems with the size or location of the current foundry sand stockpiles during the site visit on May 20, 1999.

Q. 5. The water supply well on the eastern portion of the site has been tested for petroleum-related compounds. Since a metal was detected in the leach test of the foundry sand at a concentration above the State Health Risk Limit for groundwater (cadmium), should metals also be tested in the well? Should other indicator-type parameters like conductivity, pH, etc., also be analyzed?

- A. 5. The testing performed on the well installed in 1998 on the eastern portion of the site was conducted under the direction of Dakota County staff. Samples were collected by Dakota County staff and the analysis was performed by Spectrum Labs, Inc. The analyses conducted were gasoline and diesel range organics compounds, alkalinity, laboratory pH, specific conductivity, appearance and volatile organics compounds (Minnesota Department of Health 465E list). Barr's review of the data and data quality information indicates that the results are accurate. None of the results showed any indication of contamination. However, tests were not conducted for metals and phenolic compounds which are potentially of concern in foundry sand.

Given the relatively low levels of contaminants measured in the foundry sand and the generally low mobility in soils and groundwater of the contaminants of concern, Barr believes it is unlikely that the foundry sand stockpiles have adversely affected groundwater at the site. However, a direct approach to determining if the foundry sand stockpiles have had an adverse effect on groundwater is to collect and analyze groundwater samples. Since the two wells at the site are downgradient (east) of the largest foundry sand stockpile, Barr recommends that samples from each of these wells be collected and analyzed for dissolved metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, copper, nickel, zinc), total phenol, diesel range organics, gasoline range organics, pH, electric conductivity and alkalinity.

Barr recommends that this monitoring be conducted at these two wells once per year for two years in different seasons to allow for seasonal fluctuations. If no contamination is detected, Barr recommends that sampling be scaled back to once every other year.

- Q. 6. Will additional foundry sand be brought to the site in the future after the current stockpile is exhausted?

- A. 6. Bituminous Roadways has indicated that they have no plans to bring additional foundry sand to the site once the current stockpile on the northwest portion of the site is used. It is planned that the foundry sand contained in the berm on the southeast portion of the site will remain at that location.

- Q. 7. What environmental concerns are there with stockpiling and reusing manufactured organic shingle scrap, glass, recycled asphalt and concrete pavement? Is there an environmental concern regarding the stockpile size and storage time for these materials. Will any of these materials be disposed of at the site?

- A. 7. Bituminous Roadways has indicated that none of the materials mentioned (shingle scrap, glass, recycled asphalt, and concrete pavement) will be disposed of at the site. All of these materials are added to the hot

Foundry Sand Sampling and Analysis Investigation Report

Bituminous Roadways

Prepared for

**Bituminous
Roadways, Inc.**



Wenck

November 2000

Foundry Sand Sampling and Analysis Investigation Report

Bituminous Roadways

Wenck File #0425-08

Prepared for:

BITUMINOUS ROADWAYS, INC.
9050 Jefferson Trail
Inver Grove Heights, Minnesota 55077

Prepared by:

WENCK ASSOCIATES, INC.
360 North Robert Street
Suite 414
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November 2000



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TABLES

1	Stockpile Characterization Data –Metals by Toxic Characterization Leaching Procedure, Mercury, Total Phenolics, and DRO
2	Stockpile Characterization Data – Metals by Synthetic Precipitation Leaching Procedure

FIGURE

1	Site Location Map
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APPENDIX

A	Site Photographs
B	Pace Analytical, Inc. Laboratory Data

1.0 Foundry Sand Investigation

1.1 BACKGROUND

A stockpile of approximately 30,000 cubic yards of foundry sand imported from the Prospect Foundry and Smith Foundry is located at the Bituminous Roadways aggregate mining and processing facility in the City of Inver Grove Heights (Figure 1). The stockpile was placed at the location in approximately 1987. The intention was to use the material as an aggregate substitute, thereby minimizing the use of virgin sands from their aggregate resource pit.

The stockpile is presently stabilized by a healthy vegetative cover of alfalfa and grass.

1.2 OBJECTIVES

The objectives of this investigation were:

- To collect and analyze stockpile samples that will characterize the foundry wastes located at the Bituminous Roadways, Inc. Inver Grove Heights facility.
- To ensure that the number and spatial location of samples collected during this investigation are based on a reasonable, statistically based approach to be representative of the overall characteristic of the material.
- To generally characterize the potential risk to human health, welfare and the environment resulting from the foundry wastes.

1.3 HISTORIC INVESTIGATIONS

In May 1998, Braun Intertec Corporation collected samples from the stockpile and analyzed them for Toxic Characteristic Leaching Procedure (TCLP). Results were presented in a May 28, 1998 letter from P. Terhaar (Braun) to M. Jorgenson (Bituminous Roadways) and included as part of Wenck's Foundry Sand Sampling and Analysis Work Plan dated August 2000. All detections were below the regulatory limit at which the material would be considered hazardous for the toxicity characteristic.

In September 1999, Wenck conducted a water quality investigation to screen surface and groundwater for several parameters including the 8 RCRA metals, copper, nickel, zinc, diesel range organics (DRO), gasoline range organics (GRO), pH, conductivity, and alkalinity. Results indicated that the foundry sands had not impacted surface water or groundwater. The sampling event was repeated in August 2000. Those results are also included in Wenck's above-mentioned Work Plan dated August 2000.

1.4 SOIL SAMPLE TARGET ANALYTES

Based on previous results and the nature of foundry wastes, the parameters of concern for this investigation included the following metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, copper, nickel and zinc. DRO and total phenolics were also parameters of concern. With regard to metals, each sample was analyzed for total metals and metals utilizing a synthetic precipitation leaching procedure (SPLP), which determines the degree of mobility that the metals may have under non-landfill conditions.

1.5 SAMPLING LOCATIONS

The stockpile of foundry sands is approximately 150 by 400 feet, with a height of 20 to 25 feet. Since the maximum heights are located along the long axis (centerline) of the pile, the sample locations were selected along this axis to maximize the depth profiling that is achieved with each individual sample location. An auger was advanced at each sampling location to obtain soil samples (see next section for more detailed discussion of sampling methods). Grab samples were obtained from the 4-, 8-, 12-, and 16-foot depths and composited into one sample for laboratory analysis, thus providing a representative vertical profile at each sampling location. Photographs of the foundry sand pile and representative sampling locations are included as Appendix A.

1.6 SAMPLE COLLECTION METHODS

The four samples were collected using truck-mounted, 4-inch (nominal) diameter flight auger equipment. This equipment was driven onto the top of the pile to collect the samples described in the previous section. Augers were advanced to the four desired sample depths to obtain the four grab samples for each four-part composite sample. As the auger reached each sample depth, two cups of sand were collected from the flight auger cuttings and placed in a stainless steel bowl. When the four equal-volume (two cup) grab samples were placed into the bowl, the four grab samples were thoroughly mixed using a stainless steel spoon. After mixing, the samples for laboratory analysis were collected from the mixed sands.

1.7 ANALYTICAL METHODS

Each of the four samples collected were analyzed by the four methods described below.

1.7.1 Total Metals

All soil samples were analyzed using EPA Method 6010 employing Inductively Coupled Plasma (ICP) with the exception of mercury, which will be analyzed by Cold Vapor Atomic Absorption (CVAA), EPA Method 7470A/7471A. One 8-ounce amber-glass jar of soil was collected for each sample. No sample preservation was required other than to cool the samples to 4°C.

1.7.2 Synthetic Precipitation Leaching

The SPLP was conducted using SW846 Method 1312. A separate 8-ounce amber-glass jar was collected for each sample. No sample preservation was required other than to cool the samples to 4°C.

1.7.3 Diesel Range Organics (DRO)

Samples for DRO analyses were collected using an EnCore™ sampling unit (consistent with the revised EPA SW-846 5035 sampling methodology) and submitted for Wisconsin Modified DRO analysis. Samples were cooled on ice to 4°C as above.

1.7.4 Total Phenolics

Total phenolics were analyzed by EPA Method 420.2/9066. A separate 2-ounce glass jar was collected for each sample. No sample preservation was required other than to cool the samples to 4°C.

1.8 FIELD SCREENING

No organic vapor monitoring was performed. Field observations were recorded as noted in the sample collection protocols. No significant field observations were made. The foundry sands were dark in color, and had the appearance of a rich sandy loam soil high in organics.

1.9 QUALITY ASSURANCE/QUALITY CONTROL PLAN

Quality assurance/quality control (QA/QC) procedures were of prime importance to this investigation to ensure quality of the data collected, and thus the interpretations made from the data. The Wenck corporate QA/QC program, which mandates the use of industry-wide accepted procedures and practices, was followed throughout the investigation.

Project-specific measures taken included:

- One field rinse blank sample. The blank duplicate will verify the reliability of the soil sample collection procedures to assure that no contaminants were introduced as a function of the sampling methodology. Analysis included the four analytical methods described in Section 1.7.

2.0 Analytical Results

Table 1 shows concentrations for soil samples for metals by TCLP, mercury, total phenolics, and DRO. Laboratory results did not exceed the Tier 1 Soil Reference Values (SRVs) or the Soil Leaching Values (SLVs). Pace Analytical Services, Inc. laboratory data are included as Appendix B.

No SRV or SLV exists for DRO, however, if Minnesota Pollution Control Agency Leaking Underground Storage Tank guidelines are used (50 mg/kg) there were DRO exceedances in samples from FS-1, FS-2, and FS-4. It must be emphasized, however, that the DRO guideline is not based on human health or ecological risk evaluation, but rather derived as a field “action level” for the purpose of the Leaking Underground Storage Tank (LUST) program. MPCA attempts to quantify DRO risk-based cleanup standards have generally yielded numbers higher than 50 mg/kg.

Table 2 shows analytical results for metals by Synthetic Precipitation Leaching Procedure (SPLP) and comparisons to State of Minnesota Health Risk Levels (HRLs) for groundwater. This laboratory procedure is an indication of the degree of mobility of these metals under non-landfill conditions, that is, conditions more representative of rainwater infiltration. Metals by SPLP are reported in micrograms per liter (ug/l) and so are compared to Health Risk Limits published by the Minnesota Department of Health rather than the SRVs and SLVs used for TCLP. As with the TCLP analysis of the same soils, there were no exceedances of samples analyzed by SPLP.

3.0 Recommendations

Laboratory analysis of the characteristics of the 30,000 cubic yards of foundry sand indicated that there were no exceedances of Tier 1 Soil Reference Values or Soil Leaching Values detected in the soil samples. Therefore, the material does not pose a threat of leaching metals compounds or phenolic compounds into surfacewater or groundwater if it remains at the site. The best indication of this is that the material did not leach high concentration of metals even when tested by strongly acidic conditions (i.e., the TCLP analyses of previous sampling work).

Three of the four samples had DRO exceedances when compared to MPCA underground storage tank guidelines. We recommend that the soil be land applied to a thickness of approximately six inches to promote more rapid microbial degradation and natural attenuation of these residual hydrocarbons, however, from a standpoint of risk-based decision-making, no action is necessary based on the detected concentrations and the current land use scenario.

Based on the information in this report, no additional investigation is recommended.

Table 1
Stockpile Characterization Data - Toxic Characterization Leaching Procedure and Others
Foundry Waste Stockpile
Bituminous Roadways, Inc. Inver Grove Heights Facility

Metals	Soil Leaching		Tier 1 Soil		FS-1		FS-2		FS-3		PRL		FS-4		PRL Units	
	Value	Reference Value														
Arsenic	25	10			4.8	1.33	ND	1.33	ND	1.35	ND	1.35	ND	1.31	mg/kg	
Barium	12500	1200			34.5	2.66	48.2	2.66	60	2.69	58.2	2.69	58.2	2.62	mg/kg	
Cadmium	250	35			ND	0.266	ND	0.266	ND	0.269	ND	0.269	ND	0.262	mg/kg	
Chromium	100000	34300			25.5	2.66	84.1	2.66	27.7	2.69	55.5	2.69	55.5	2.62	mg/kg	
Copper	9000	100			43.7	1.33	90.7	1.33	28.1	1.35	57.2	1.35	57.2	1.31	mg/kg	
Lead	700	400			10.7	0.798	8.27	0.798	62	0.808	15.3	0.808	15.3	0.796	mg/kg	
Mercury	2	0.7			0.151	0.0219	ND	0.0201	0.027	0.0213	0.0278	0.0213	0.0278	0.0206	mg/kg	
Nickel	3000	520			22.4	5.32	115	5.32	21.4	5.39	59.1	5.39	59.1	5.24	mg/kg	
Selenium	1250	170			ND	1.33	ND	1.33	ND	1.35	ND	1.35	ND	1.31	mg/kg	
Silver	1250	170			ND	2.66	ND	2.66	ND	2.69	ND	2.69	ND	2.62	mg/kg	
Zinc	70000	8700			28.4	5.32	33.2	5.32	31.9	5.39	29.1	5.39	29.1	5.24	mg/kg	
Phenolics Total in Soil																
Phenol	26800	1100			ND	27.4	6.18	5.49	ND	5.39	ND	5.39	ND	5.37	mg/kg	
GC Semivolatiles																
Diesel Range Organic Compounds		50*			150	32	140	6.5	45	6.1	180	6.1	180	7.4	mg/kg	

* = MPCA Leaking Underground Storage Tank guidelines

Table 2

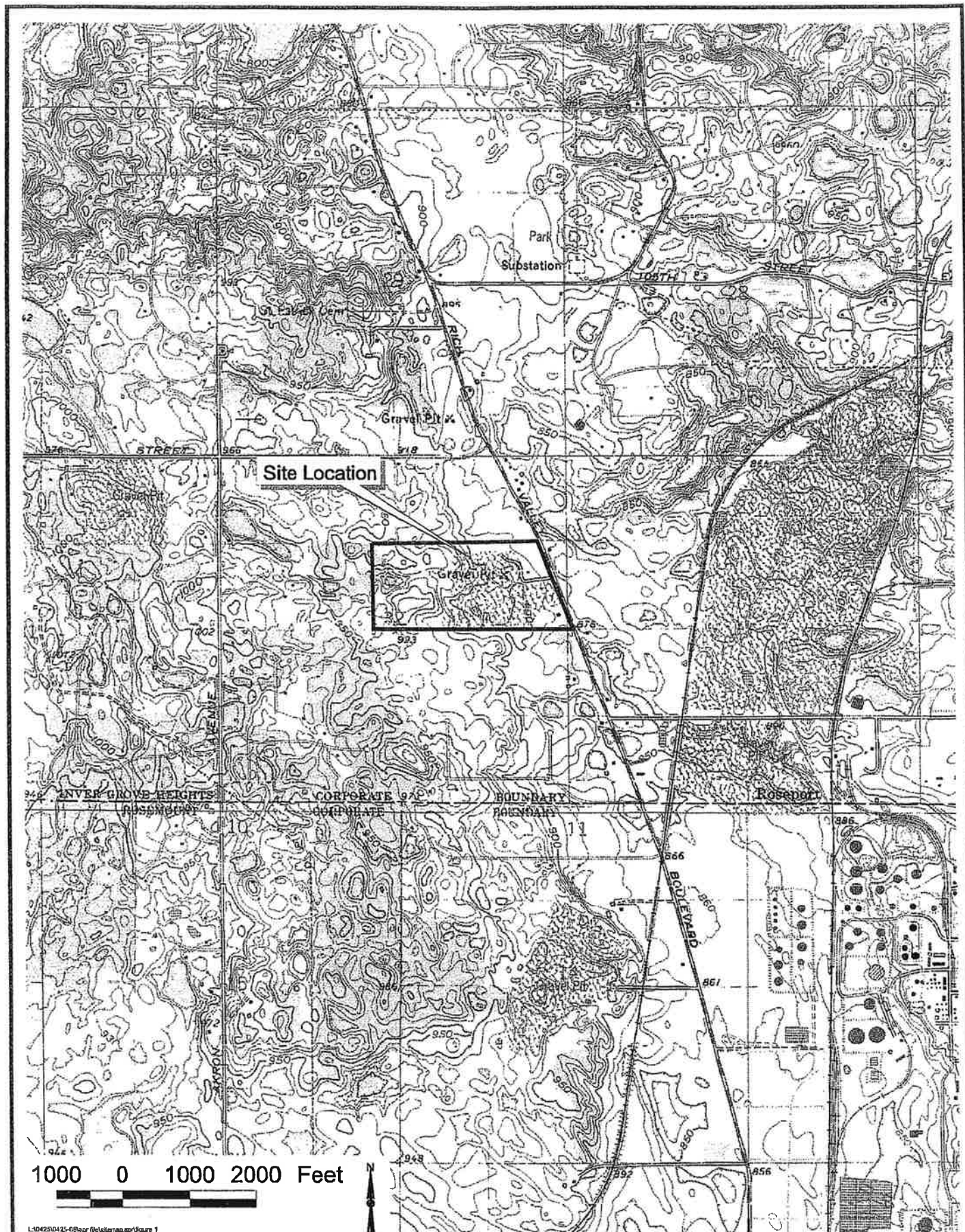
Stockpile Characterization Data - Metals by Synthetic Precipitation Leaching Procedure

Foundry Waste Stockpile
Bituminous Roadways, Inc., Inver Grove Heights Facility

Metals	Minnesota		FS-1 PRL	FS-2 PRL	FS-3 PRL	FS-4 PRL	Units
	Federal MCL	Health Risk Level					
SPLP on Solid, ICP Metals							
Arsenic	50 ⁽¹⁾		ND	ND	ND	ND	15 ug/l
Barium		2000	ND	ND	127	101	30 ug/l
Cadmium		4	ND	ND	ND	ND	3 ug/l
Chromium		20000	ND	ND	ND	ND	30 ug/l
Copper	1000		ND	ND	28.2	34.3	15 ug/l
Lead	15 ⁽¹⁾⁽²⁾		ND	ND	118	ND	9 ug/l
Mercury	2		ND	ND	ND	ND	0.8 ug/l
Nickel		100	ND	ND	ND	ND	60 ug/l
Selenium		30	ND	ND	ND	ND	15 ug/l
Silver		30	ND	ND	ND	ND	30 ug/l
Zinc		2000	ND	ND	60.2	ND	60 ug/l

⁽¹⁾ = Federal Action Level⁽²⁾ = Lead (Pb) concentration sampled at the tap

MCL = Maximum Contaminant Level



BITUMINOUS ROADWAYS - Inver Grove Heights

Site Location Map

Wenck
Wenck Associates, Inc. 1800 Pioneer Creek Center
Environmental Engineers Maple Plain, MN 55359-0429

NOV 2000

Figure 1

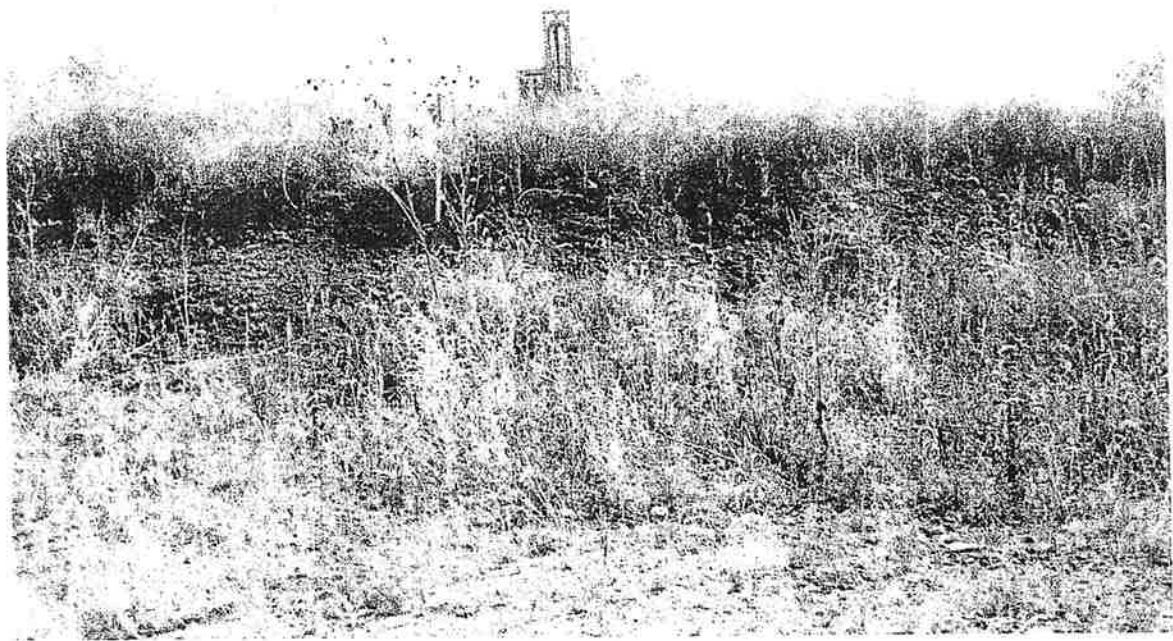


Photo 1: View facing east along axis of foundry sand pile. Marker Station 00 in the foreground.

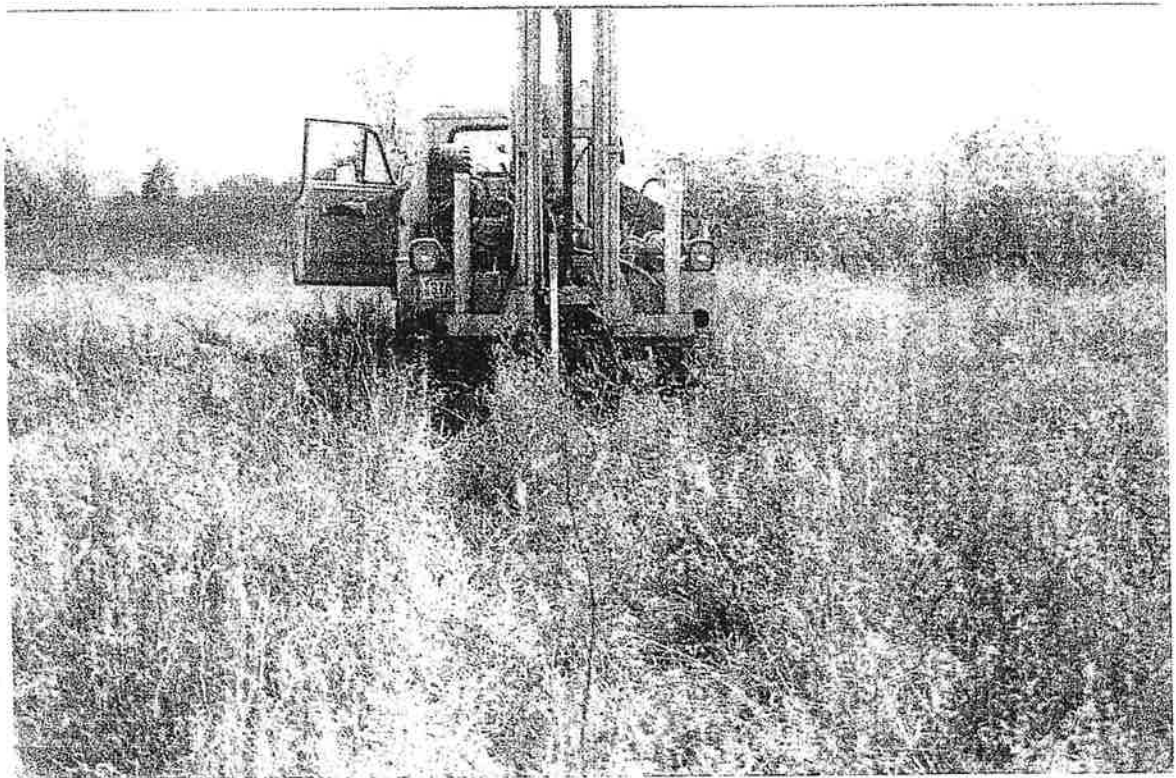


Photo 2: View of flight auger at first sampling location.

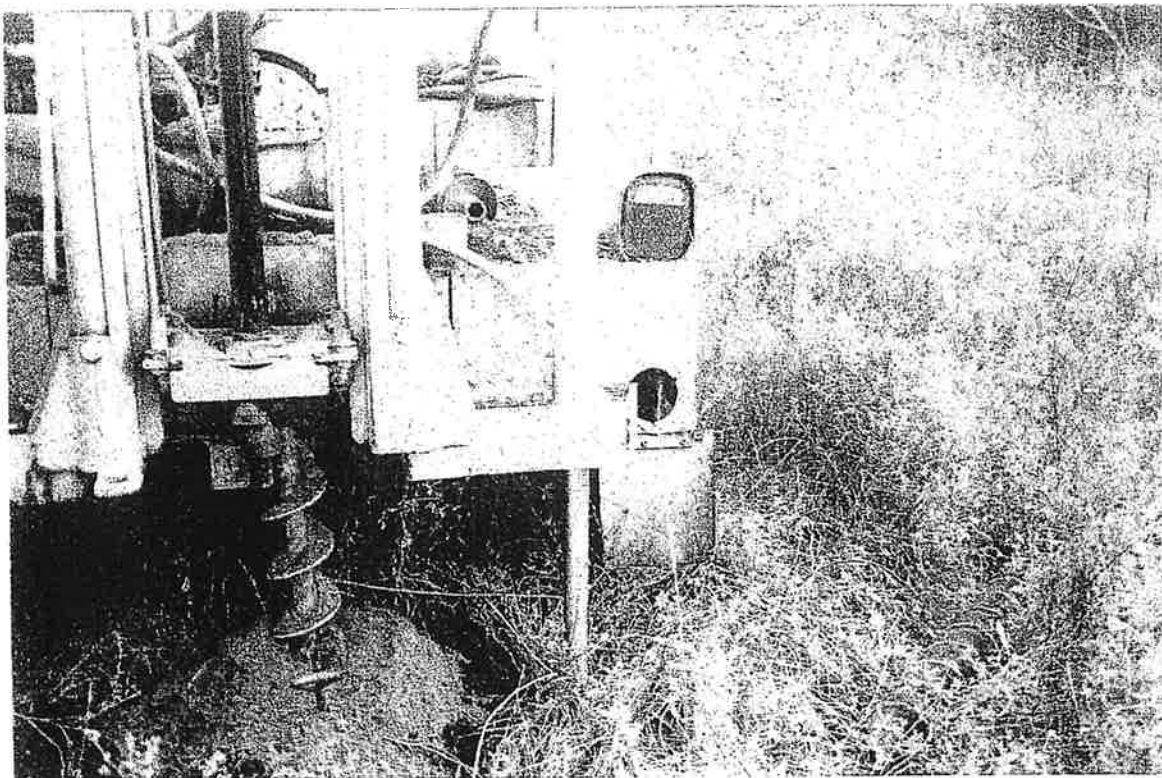


Photo 3: View of flight auger at sampling location #4. Underlying native soils (brown, sandy) are visible having been encountered at approximately 13.5' below grade.

Appendix B

Pace Analytical, Inc. Laboratory Data

DATE: 11/13/00
PAGE: 1

Rock Associates, Inc.
100 N. Robert St. Ste. 414
Paul, MN 55101

Pace Project Number: 1037418
Client Project ID: Bituminous Roadways

Client: Mr. Joe Otte
Phone: (651)228-1939

All results are reported on a dry weight basis

Sample No:	102315520	Date Collected:	10/04/00	Matrix:	Soil
Parent Sample ID:	FS-1	Date Received:	10/05/00		

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
------------	---------	-------	-----	----------	---------	------	-----------

Organics Prep

Percent Moisture	Method:		Prep Method:
Percent Moisture	8.8	%	10/09/00 JMZ

Metals

PLP on Solid, ICP Metals	Method: EPA 6010	Prep Method: EPA 3010
Arsenic	ND ug/l 15	10/23/00 BDA 7440-38-2
Barium	ND ug/l 30	10/23/00 BDA 7440-39-3
Cadmium	ND ug/l 3	10/23/00 BDA 7440-43-9
Chromium	ND ug/l 30	10/23/00 BDA 7440-47-3
Copper	ND ug/l 15	10/23/00 BDA 7440-50-8
Lead	ND ug/l 9	10/23/00 BDA 7439-92-1
Nickel	ND ug/l 60	10/23/00 BDA 7440-02-0
Selenium	ND ug/l 15	10/23/00 BDA 7782-49-2
Silver	ND ug/l 30	10/23/00 BDA 7440-22-4
Zinc	ND ug/l 60	10/23/00 BDA 7440-66-6
Date Digested		10/13/00

Metals, Trace ICP	Method: EPA 6010	Prep Method: EPA 3050
Arsenic	4.8 mg/kg 1.33	10/23/00 BDA 7440-38-2
Barium	34.5 mg/kg 2.66	10/23/00 BDA 7440-39-3
Cadmium	ND mg/kg 0.266	10/23/00 BDA 7440-43-9
Chromium	25.5 mg/kg 2.66	10/23/00 BDA 7440-47-3
Copper	43.7 mg/kg 1.33	10/23/00 BDA 7440-50-8
Lead	10.7 mg/kg 0.798	10/23/00 BDA 7439-92-1
Nickel	22.4 mg/kg 5.32	10/23/00 BDA 7440-02-0
Selenium	ND mg/kg 1.33	10/23/00 BDA 7782-49-2

REPORT OF LABORATORY ANALYSIS

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DATE: 11/13/00
PAGE: 2

Pace Project Number: 1037418
Client Project ID: Bituminous Roadways

Sample No: 102315520
Sample ID: FS-1

Date Collected: 10/04/00
Date Received: 10/05/00

Matrix: Soil

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Silver	ND	mg/kg	2.66	10/23/00	BDA	7440-22-4	
Zinc	28.4	mg/kg	5.32	10/23/00	BDA	7440-66-6	
Date Digested				10/16/00			
PLP, Mercury		Method: EPA 7470			Prep Method: EPA 7470		
Mercury	ND	ug/l	0.8	10/17/00	BDA	7439-97-6	
Mercury, CVAAS		Method: EPA 7471			Prep Method: EPA 7470		
Mercury	0.151	mg/kg	0.0219	10/17/00	BDA	7439-97-6	
Chemistry							
Phenolics Total. in Soil		Method: EPA 420.1 Modified			Prep Method: EPA 420.1 Modified		
Phenol	ND	mg/kg	27.4	10/09/00	JB1	108-95-2	
PLP on Solid, ICP Metals		Method: EPA 6010			Prep Method: EPA 1312		
Date Prepared				10/10/00			
PLP, Mercury		Method: EPA 7470			Prep Method: EPA 1311		
Date Prepared				10/12/00			
Semivolatiles							
WI DRO in Soil		Method: TPH DRO Wisconsin			Prep Method: TPH DRO WI extracti		
Diesel Range Organic Compounds	150	mg/kg	32	10/18/00	BM1		
n-Triacontane (S)	57	%		10/18/00	BM1	638-68-6	
Date Extracted				10/12/00			

REPORT OF LABORATORY ANALYSIS

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DATE: 11/13/00
PAGE: 3

Pace Project Number: 1037418
Client Project ID: Bituminous Roadways

Ice Sample No:	102315538	Date Collected:	10/04/00	Matrix:	Soil
Test Sample ID:	FS-2	Date Received:	10/05/00		

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
------------	---------	-------	-----	----------	---------	------	-----------

Organics Prep

Percent Moisture	Method:		Prep Method:
Percent Moisture	9.5	%	10/09/00 JMZ

Metals

SPLP on Solid, ICP Metals	Method: EPA 6010	Prep Method: EPA 3010
Arsenic	ND ug/l 15	10/23/00 BDA 7440-38-2
Barium	ND ug/l 30	10/23/00 BDA 7440-39-3
Cadmium	ND ug/l 3	10/23/00 BDA 7440-43-9
Chromium	ND ug/l 30	10/23/00 BDA 7440-47-3
Copper	ND ug/l 15	10/23/00 BDA 7440-50-8
Lead	ND ug/l 9	10/23/00 BDA 7439-92-1
Nickel	ND ug/l 60	10/23/00 BDA 7440-02-0
Selenium	ND ug/l 15	10/23/00 BDA 7782-49-2
Silver	ND ug/l 30	10/23/00 BDA 7440-22-4
Zinc	ND ug/l 60	10/23/00 BDA 7440-66-6
Date Digested		10/13/00

Metals, Trace ICP	Method: EPA 6010	Prep Method: EPA 3050
Arsenic	ND mg/kg 1.34	10/23/00 BDA 7440-38-2
Barium	48.2 mg/kg 2.68	10/23/00 BDA 7440-39-3
Cadmium	ND mg/kg 0.268	10/23/00 BDA 7440-43-9
Chromium	84.1 mg/kg 2.68	10/23/00 BDA 7440-47-3
Copper	90.7 mg/kg 1.34	10/23/00 BDA 7440-50-8
Lead	8.27 mg/kg 0.804	10/23/00 BDA 7439-92-1
Nickel	115 mg/kg 5.36	10/23/00 BDA 7440-02-0
Selenium	ND mg/kg 1.34	10/23/00 BDA 7782-49-2
Silver	ND mg/kg 2.68	10/23/00 BDA 7440-22-4
Zinc	33.2 mg/kg 5.36	10/23/00 BDA 7440-66-6
Date Digested		10/16/00

SPLP, Mercury	Method: EPA 7470	Prep Method: EPA 7470
Mercury	ND ug/l 0.8	10/17/00 BDA 7439-97-6
Mercury, CVAAS	Method: EPA 7471	Prep Method: EPA 7470
Mercury	ND mg/kg 0.0201	10/17/00 BDA 7439-97-6

Met Chemistry

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Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DATE: 11/13/00
PAGE: 4

Pace Project Number: 1037418
Client Project ID: Bituminous Roadways

Pace Sample No: 102315538
Client Sample ID: FS-2

Date Collected: 10/04/00
Date Received: 10/05/00

Matrix: Soil

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Phenolics Total. in Soil	6.18	mg/kg	5.49	10/09/00	JB1	108-95-2	Prep Method: EPA 420.1 Modified
SPLP on Solid, ICP Metals				10/10/00			Prep Method: EPA 1312
Date Prepared							
SPLP, Mercury				10/12/00			Prep Method: EPA 1311
Date Prepared							
IC Semivolatiles							
WI DRO in Soil							Prep Method: TPH DRO WI extracti
Diesel Range Organic Compounds	140	mg/kg	6.5	10/16/00	BM1		
n-Triacontane (S)	59	%		10/16/00	BM1	638-68-6	
Date Extracted				10/12/00			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

DATE: 11/13/00

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rick Associates, Inc.
10 N. Robert St. Ste.414
Paul, MN 55101

Pace Project Number: 1037418
Client Project ID: Bituminous Roadways

In: Mr. Joe Otte
Phone: (651)228-1939

Batch ID: 50856
Analysis Method: EPA 6010
Associated Pace Samples: 102315520 102315538 102315553 102315561

QC Batch Method: EPA 3010

Analysis Description: SPLP on Solid, ICP Metals

Method BLANK: 102329430
Associated Pace Samples:

		102315520	102315538	102315553	102315561
			Method Blank		
Parameter	Units	Result	PRL	Footnotes	
Asenic	ug/l	ND	5		
Barium	ug/l	17	10		
Cadmium	ug/l	ND	1		
Chromium	ug/l	ND	10		
Copper	ug/l	ND	5		
Lead	ug/l	ND	3		
Nickel	ug/l	ND	20		
Selenium	ug/l	ND	5		
Silver	ug/l	ND	10		
Zinc	ug/l	ND	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 102329448 102329455									
Parameter	Units	102315520	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Asenic	ug/l	0	1000	931.2	93.1	923.1	92.3	1	
Barium	ug/l	9.504	1000	966.6	95.7	958.8	94.9	1	
Cadmium	ug/l	0	1000	950.1	95.0	942.6	94.3	1	
Chromium	ug/l	3.378	1000	954.9	95.2	944.4	94.1	1	
Copper	ug/l	4.131	1000	948.9	94.5	941.1	93.7	1	
Lead	ug/l	0.09180	1000	942.0	94.2	931.5	93.1	1	
Nickel	ug/l	4.689	1000	930.6	92.6	923.7	91.9	1	
Selenium	ug/l	0	1000	948.3	94.8	934.5	93.5	1	
Silver	ug/l	3.810	1000	944.4	94.1	937.2	93.3	1	

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 1700 Elm Street, Suite 200
 Minneapolis, MN 55414
 Phone: 612.607.1700
 Fax: 612.607.6444

QUALITY CONTROL DATA

DATE: 11/13/00
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Pace Project Number: 1037418
 Client Project ID: Bituminous Roadways

ATRIX SPIKE & MATRIX SPIKE DUPLICATE: 102329448 102329455									
Parameter	Units	102315520	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
inc	ug/l	7.062	1000	959.7	95.3	948.0	94.1	1	

LABORATORY CONTROL SAMPLE: 102329463

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
arsenic	ug/l	1000	1058	106	
barium	ug/l	1000	983.8	98.4	
cadmium	ug/l	1000	992.0	99.2	
chromium	ug/l	1000	988.9	98.9	
copper	ug/l	1000	1021	102	
lead	ug/l	1000	995.3	99.5	
nickel	ug/l	1000	966.4	96.6	
selenium	ug/l	1000	1056	106	
silver	ug/l	1000	1024	102	
zinc	ug/l	1000	1040	104	

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DATE: 11/13/00
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Rock Associates, Inc.
100 N. Robert St. Ste. 414
Paul, MN 55101

Pace Project Number: 1037418
Client Project ID: Bituminous Roadways

Attention: Mr. Joe Otte
Phone: (651)228-1939

Batch ID: 50896
Analysis Method: EPA 7471
Associated Pace Samples: 102315520 102315538 102315553 102315561
QC Batch Method: EPA 7470
Analysis Description: Mercury, CVAAS

Method Blank: 102333713
Associated Pace Samples:

	102315520	102315538	102315553	102315561
		Method Blank		
Parameter	Units	Result	PRL	Footnotes
Mercury	mg/kg	ND	0.02	

RIX SPIKE & MATRIX SPIKE DUPLICATE: 102333739 102333747									
			Spike	Matrix	Matrix	Spike			
Parameter	Units	102314929	Conc.	Spike Result	Spike % Rec	Sp. Dup. Result	Dup % Rec	RPD	Footnotes
Mercury	mg/kg	4.462	0.5860	4.756	50.2	4.720	44.0	13	3

LABORATORY CONTROL SAMPLE: 102333721

		Spike	LCS	Spike	
Parameter	Units	Conc.	Result	% Rec	Footnotes
Mercury	ug/l	5.000	5.295	106	

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Black Associates, Inc.
50 N. Robert St. Ste.414
Paul, MN 55101

Pace Project Number: 1037418
Client Project ID: Bituminous Roadways

Client: Mr. Joe Otte
Phone: (651)228-1939

Batch ID: 50903 QC Batch Method: EPA 7470
Analysis Method: EPA 7470 Analysis Description: SPLP, Mercury
Associated Pace Samples: 102315520 102315538 102315553 102315561

METHOD BLANK: 102333861
Associated Pace Samples:

	102315520	102315538	102315553	102315561
		Method Blank		
Parameter	Units	Result	PRL	Footnotes
Mercury	ug/l	ND	0.8	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 102333879 102333887									
			Spike	Matrix		Matrix	Spike		
Parameter	Units	102315520	Conc.	Spike Result	Spike % Rec	Sp. Dup. Result	Dup % Rec	RPD	Footnotes
Mercury	ug/l	0	20	21.52	108	21.23	106	1	

LABORATORY CONTROL SAMPLE: 102333895

		Spike	LCS	Spike	
Parameter	Units	Conc.	Result	% Rec	Footnotes
Mercury	ug/l	20	21.48	107	

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Clark Associates, Inc.
100 N. Robert St. Ste. 414
Paul, MN 55101

Pace Project Number: 1037418
Client Project ID: Bituminous Roadways

Lab: Mr. Joe Otte
Phone: (651)228-1939

Batch ID: 50913
Analysis Method: EPA 6010
Associated Pace Samples: 102315520 102315538 102315553 102315561
QC Batch Method: EPA 3050
Analysis Description: Metals, Trace ICP

Method Blank: 102334273
Associated Pace Samples:

	102315520	102315538	102315553	102315561
		Method Blank		
Parameter	Units	Result	PRL	Footnotes
Lead	mg/kg	ND	0.25	
Mercury	mg/kg	ND	0.5	
Antimony	mg/kg	ND	0.05	
Chromium	mg/kg	ND	0.5	
Copper	mg/kg	ND	0.25	
Cadmium	mg/kg	ND	0.15	
Cobalt	mg/kg	ND	1	
Vanadium	mg/kg	ND	0.25	
Silver	mg/kg	ND	0.5	
Iron	mg/kg	ND	1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 102334281 102334299									
Parameter	Units	102315520	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Lead	mg/kg	4.796	51.7	52.24	91.8	55.23	93.9	2	
Mercury	mg/kg	34.47	51.7	88.11	104	87.94	99.5	4	
Antimony	mg/kg	0	51.7	44.28	85.7	47.41	88.3	3	
Chromium	mg/kg	25.50	51.7	73.56	93.0	75.24	92.6	0	
Copper	mg/kg	43.70	51.7	84.34	78.6	84.08	75.1	5	3
Cadmium	mg/kg	10.72	51.7	55.78	87.2	59.07	90.0	3	
Cobalt	mg/kg	22.39	51.7	65.73	83.8	65.59	80.4	4	
Vanadium	mg/kg	0.3761	51.7	43.94	84.3	48.27	89.1	6	
Silver	mg/kg	0.3506	51.7	45.67	87.7	48.73	90.0	3	

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Pace Project Number: 1037418
Client Project ID: Bituminous Roadways

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 102334281 102334299									
Parameter	Units	102315520	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
inc	mg/kg	28.36	51.7	73.98	88.2	75.16	87.1	1	

LABORATORY CONTROL SAMPLE: 102334307

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
arsenic	mg/kg	1.000	0.8901	89.0	
barium	mg/kg	1.000	0.9235	92.4	
cadmium	mg/kg	1.000	0.8819	88.2	
chromium	mg/kg	1.000	0.9124	91.2	
copper	mg/kg	1.000	0.9135	91.4	
lead	mg/kg	1.000	0.8825	88.3	
nickel	mg/kg	1.000	0.8650	86.5	
selenium	mg/kg	1.000	0.8478	84.8	
silver	mg/kg	1.000	0.8975	89.8	
zinc	mg/kg	1.000	0.8792	87.9	

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Pace Project Number: 1037418
Client Project ID: Bituminous Roadways

QUALITY CONTROL DATA PARAMETER FOOTNOTES

consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

) Not Detected

: Not Calculable

Pace Reporting Limit

- Relative Percent Difference

S) Surrogate

Phenol was detected in the blank. However, all samples were non-detect.

The surrogate and/or spike recovery was outside acceptance limits.

3] The spike recovery was outside acceptance limits for the MS and /or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

REPORT OF LABORATORY ANALYSIS

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Technical Memorandum

To: Ally Sutherland and Allan Hunting
From: Ray Wuolo, Senior Hydrogeologist and Jeff Ubl, P.E.
Subject: Bituminous Roadways, Inc. (BRI) – Environmental Review of Proposed Expansion
Date: September 29, 2022
Project: 2319-0218

This memorandum provides Barr Engineering Co.'s (Barr's) review of potential environmental-related impacts from BRI's proposed expansion of their sand and gravel mining operation located on Rich Valley Boulevard.

Proposed Expansion

Barr's understanding of the proposed BRI sand and gravel expansion is based on:

- The Conditional Use Permit (CUP) application and seven-sheet plan set both dated August 5, 2022, and prepared by Sunde Engineering, PLLC (Sunde) and,
- The September 22, 2022, virtual meeting with BRI, Sunde, City staff

From this information we understand:

- The proposed mining depth will increase by 40 feet from elevation 840-feet to elevation 800-feet
- The water-table aquifer beneath the site flows generally from west to east at an elevation between 800 to 745-feet
- The proposed expansion will increase the life of the mine by approximately 10 years
- The same equipment currently in use at the mine will continue to be used for the expansion with no increase in equipment number, size, or type
- The mining rate will remain the same for the expansion, including the frequency of truck trips to and from the operation
- The proposed mine operating aerial footprint will not increase for the proposed expansion
- The location and quantity of fuel, asphalt cement, and other chemical storage will not change from the current operation
- Backfilling of the mine is expected to consist of excess sand from the operation and clean soil from off-site BRI construction projects
- Per Minnesota Rules 4410.4300, subpart 12 the proposed expansion does not trigger a mandatory Environmental Assessment Worksheet
- After mining operations are complete, topsoil will be placed over the site and the area vegetated; end use will include agriculture and potentially residential lots

To: Ally Sutherland and Allan Hunting
From: Ray Wuolo, Senior Hydrogeologist and Jeff Ubl, P.E.

Subject: Bituminous Roadways, Inc. (BRI) – Environmental Review of Proposed Expansion
Date: September 29, 2022
Page: 2

Review of Potential Environmental Impacts

Barr reviewed the proposed expansion for potential negative impacts relating to air quality, groundwater quality and quantity, surface water quality, and noise. A discussion on each of these topics is provided below.

Air Quality

Because the proposed expansion will not increase the rate of mining, the type or quantity of equipment used, or the number of truck trips to and from the site, we believe that air quality impacts will not change from the current operation.

Groundwater Quality

Groundwater quality monitoring is conducted every-other-year at the onsite well (Rainbow well) and at the Todd Wicker and Robert Plan property wells for diesel and organics (DRO) and gasoline range organics (GRO) and for arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, phenol, pH, conductivity, and alkalinity. Results are submitted to the City and City staff indicate they have no concerns with the reported results.

It is not expected that groundwater quality would be negatively impacted by the expanded sand and gravel extraction operation. However, the subsequent soil backfilling should use only clean soil. The soil backfill material will be in very close proximity to groundwater and the 40 feet of unsaturated sand and gravel that currently is present above the water table will be removed. While this decreased thickness in the unsaturated zone should not change groundwater flow directions or rates, it will result in the water-table aquifer to be slightly more vulnerable to leaks, spills, or potential contamination in the backfill soil, compared to current conditions, because there will be less time between the discovery of a leak or spill and the ability to respond to it before the leak or spill reaches the water table and less unsaturated sand and gravel to naturally attenuate or adsorb potential contamination.

Groundwater Quantity

Because dewatering will not be needed to extract the sand and gravel for the proposed expansion, it is not expected that groundwater quantity of nearby wells will be negatively impacted.

Surface Water Quality

Surface water quality monitoring is conducted every-other-year at the site ponds for diesel and organics (DRO) and gasoline range organics (GRO) and for arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, phenol, pH, conductivity, and alkalinity. Results are submitted to the City and City staff indicate they have no concerns with the reported results.

Because the proposed expansion would increase the depth of mining it is understood that surface water runoff would continue to be contained at the site during the life of the mine. It is also understood that

To: Ally Sutherland and Allan Hunting
From: Ray Wuolo, Senior Hydrogeologist and Jeff Ubl, P.E.

Subject: Bituminous Roadways, Inc. (BRI) – Environmental Review of Proposed Expansion

Date: September 29, 2022

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storage of fuel, asphalt cement, and other chemicals would continue at the same location and at the same quantities as the current operation.

After mining is complete and the mine backfilled, surface water is proposed to be contained on site in the same manner as the plan for the current operation. Therefore, we do not foresee any negative impacts to surface water quality from the proposed expansion but recommend that BRI review and update its Spill Prevention, Control, and Countermeasure (SPCC) Plan as appropriate.

Noise

Barr was retained by the City to perform a noise assessment on the western edge of BRI's operation in 2018. Barr's assessment concluded that conditions at nearby residences was likely in full compliance with state noise standards.

Because the proposed expansion will not increase the rate of mining, the type or number of equipment used, or the number of truck trips to and from the site, we do not believe there will be any negative noise impacts from the proposed expansion.

Conclusions and Recommendations

Barr recommends that the City's CUP contain requirements for soil backfilling and the SPCC plan as described below.

For soil backfill material, Barr recommends only non-organic compactable soil material be used that is free of contamination, recycled or salvaged aggregate, asphaltic pavement, crushed concrete, scraps of shingles, debris, rubbish, frozen soil, boulders over 1-inch in diameter, logs, wood chips or other objectionable material. Backfill soil should be free of stumps, roots, and branches over 1.5- inches in diameter .

Backfill soils should not be placed over frozen subgrade.

Contaminated soil should not be used as fill or brought to the site. If the source of imported fill will be from a location where soil contamination is known, suspected, or can be expected (e.g., soils from gas stations, certain industrial sites, etc.), that soil should not be used for backfilling. Therefore, it is further recommended that offsite backfill soil come from only BRI projects and include a manifest from each site indicating that no contaminants are suspected to be in the soil material. A copy of the manifest could be submitted to the City.

Barr recommends that BRI review and amend the SPCC Plan as appropriate and submit a copy to the City. The SPCC Plan should document practices, personnel, equipment, and resources available to prevent a spill and what actions to take if a spill were to occur.

August 5, 2022
Revised: October 12, 2022

REPORT TO:

BITUMINOUS ROADWAYS, INC.

**APPLICATION FOR
REISSUANCE OF CONDITIONAL USE PERMIT FOR THE
MINING AND PROCESSING OF SAND AND GRAVEL, AN
ASPHALT PLANT AND CONTRACTOR'S YARD WITH
OPEN STORAGE AND FIVE YEAR SAND AND GRAVEL
OVERLAY DISTRICT**

INVER GROVE HEIGHTS, MINNESOTA



Consulting Civil Engineers

Sunde Engineering, PLLC.

10830 Nesbitt Avenue South • Bloomington, Minnesota 55437-3100
Phone: (952) 881-3344 • Fax: (952) 881-1913 • E-Mail: info@sundecivil.com

REPORT TO:
BITUMINOUS ROADWAYS, INC.

**APPLICATION FOR
REISSUANCE OF CONDITIONAL USE PERMIT FOR THE
MINING AND PROCESSING OF SAND AND GRAVEL, AN
ASPHALT PLANT AND CONTRACTOR'S YARD WITH
OPEN STORAGE AND FIVE YEAR SAND AND GRAVEL
OVERLAY DISTRICT**

INVER GROVE HEIGHTS, MINNESOTA

I HEREBY CERTIFY THAT THIS REPORT
WAS PREPARED BY ME OR UNDER MY
DIRECT SUPERVISION AND THAT I AM
A DULY LICENSED PROFESSIONAL
ENGINEER AND A DULY LICENSED
PROFESSIONAL GEOLOGIST UNDER
THE LAWS OF THE STATE OF MINNESOTA.



Kirsten Pauly, P.E. P.G.

DATE 10/12/22 REG. NO. 21842

SUBMITTED BY:

SUNDE ENGINEERING, PLLC
10830 Nesbitt Avenue South
Bloomington, MN 55437

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- Figure 3: Landscaping – East Property Line
- Figure 3A: Landscaping – South Property Line
- Figure 3B: Screening Berm Detail
- Figure 4: Water Testing Map 2022-2026

- Attachment 1: Property Owners Within 1000 Feet
- Attachment 2: The Technical Memorandum for the Bituminous Roadways, Inc. - Environmental Review of Proposed Expansion, by Barr Engineering Co. dated September 29, 2022
- Attachment 3: Report of Frequently Asked Questions for Bituminous Roadways, Inc. Proposed Wash Water Well by Barr Engineering Company, dated October 2012
- Attachment 4: The Technical Memorandum for the Bituminous Roadways Noise Assessment, by Barr Engineering Co. dated November 29, 2018
- Attachment 5: Wetland Delineation Report
- Attachment 6: Storm Water Management Calculations

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- C-5 Cross-Section C-C'
- C-6 Reclamation Plan

I. INTRODUCTION

Bituminous Roadways, Inc. (BRI) operates a sand and gravel mining and processing facility located in the southern portion of Inver Grove Heights (Site). The Site operates in accordance with City of Inver Grove Heights Ordinance 1343 which establishes operating conditions and a five year Sand and Gravel Zoning over the property. The Site also operates under a five year Conditional Use Permit (CUP) that allows for operation of the asphalt plant, mining and processing of sand and gravel, and a contractor's yard. The current CUP and Ordinance 1343 were issued in October of 2017. The CUP was amended in 2020 to allow the storage of 5.3 million gallons of asphalt cement in three above ground tanks. This application pertains to a five year renewal of the operating conditions and Temporary Sand and Gravel Zoning of the Site. This application provides updated information on Site operations.

Activities allowed include mining and processing (crushing, screening, and washing), stockpiling, loading and hauling, reclamation, bulk asphalt cement storage, and operation of an asphalt plant and a contractor's yard. In addition, the Site operates under a General Non-Metallic Mineral Mining and Associated Activities National Pollutant Discharge Elimination System (NPDES) Permit and an Air Emissions Permit issued by the Minnesota Pollution Control Agency (MPCA), a Minnesota Department of Natural Resources (DNR) Water Appropriations Permit, a Dakota County Hazardous Waste Generators License and Processing License, and a MPCA Permit for Storage of Liquid Substances at a Major Aboveground Storage Tank Facility. Environmental Review was completed for the mining operation with the City of Inver Grove Heights as the Responsible Government Unit (RGU). The City Council issued a negative declaration on the need for an Environmental Impact Statement (EIS) on April 8, 2002 in accordance with the Minnesota Environmental Quality Board (EQB) Rules. In 2020 a mandatory Environmental Assessment Worksheet (EAW) was completed for the construction of the 5.3 million gallon bulk asphalt cement storage facility on the Site with the MPCA as the RGU. The MPCA issued a negative declaration on the need for an EIS on September 14, 2020.

This application proposes to continue operations as currently approved, with the exception of one request to amend the current mining depth as follows:

Amend Mining Depth Limits:

BRI is currently permitted to mine to an elevation of 840 feet above mean sea level (msl) at the Site. This equates to a mining depth of approximately 60-90 feet. BRI is requesting to amend the mining depth to an elevation of 800 feet above msl in the remaining Phases of the Site. This will provide a more efficient use of this resource which is vital to meet the ongoing demand for construction aggregate in the

surrounding area. The material will be available for use in important public infrastructure projects, road improvement projects, schools, housing and other building construction needs.

The proposed mining depth would lower the maximum mining depth to the elevation of the groundwater table, but not into or below the groundwater table. The mined area will be backfilled in accordance with the approved reclamation plan allowing for future development of the Site. Backfill material will consist of only non-organic compactable soil material that is free of contamination, recycled or salvaged aggregate, asphaltic pavement, crushed concrete, scraps of shingles, debris, rubbish, frozen soil, boulders over 1-inch in diameter, logs, wood chips or other objectionable material. This amendment will allow BRI to increase the maximum mining depth by 40 feet and extract up to an additional 3.4 million cubic yards of sand and gravel material over the remaining life of the mine.

The City of Inver Grove Heights retained Barr Engineering Company (Barr) to review the potential environmental-related impacts of the proposed increased mining depth at the Site. The Technical Memorandum for the Bituminous Roadways, Inc. - Environmental Review of Proposed Expansion, by Barr Engineering Co. dated September 29, 2022 (Barr Technical Review) is provided as Attachment 2 in this report. Barr's review states that the proposed increase in mining depth will not change the air quality from the current operation. The report also states that the groundwater quality and quantity and surface water quality will not be negatively impacted by the change, but recommends that only non-organic fill free of contamination be used for backfill material. Barr's report also states that there will not be any negative noise impact from the proposed change. Barr's recommendations include that the CUP contain requirements for soil backfill material and that BRI review and amend the Spill Prevention, Control, and Countermeasure (SPCC) Plan as appropriate. BRI's current SPCC Plan includes the practices, personnel, equipment, and resources available to prevent a spill and what actions to take if a spill were to occur. The SPCC Plan will be reviewed and amended prior to initiating any mining activity below elevation 840 feet above msl at the Site.

As part of the 2012 permit renewal BRI requested to install a wash water well for the sand and gravel washing operation conducted at the Site. At that time Barr was retained to study the effects the new well would have on groundwater and the neighboring wells. Barr prepared a report to answer frequently asked questions neighbors may have had regarding the study and the installation of the wash water well. Based on the report and Barr's findings the groundwater elevation at the Site at that time was approximately 800 feet above msl. The Report of Frequently Asked

Questions for Bituminous Roadways, Inc. Proposed Wash Water Well by Barr Engineering Company, dated October 2012 (2012 FAQ Wash Water Well) is provided as Attachment 3 in this report. BRI's request to mine to the elevation of 800 feet above msl is based on the groundwater elevation information provided in this report. Since groundwater elevations fluctuate annually and seasonally, BRI will monitor the groundwater elevation at the Site and will not mine below the groundwater. BRI will update their Spill Prevention Control and Countermeasures (SPCC) Plan accordingly and implement best management practices to protect groundwater quality. BRI will also conduct groundwater monitoring in accordance with the current groundwater monitoring plan included in Section III.15.

This report and accompanying plan set provides information regarding the mining operation.

II. SITE INFORMATION

1. General Site Information

The Site is located in Section 32, Township 27 North, Range 22 W, in the City of Inver Grove Heights in Dakota County, just west of County Road 71 (Rich Valley Boulevard). The general location of the Site is illustrated on Figure 1.

The Site includes the original north mine which has been actively mined since 1963, the asphalt production plant that has been permitted since 1980, and the southerly expansion area which was originally permitted in 2002 after completion of an Environmental Assessment Worksheet (EAW). During the 2002 permitting process, the areas were combined into one permit to facilitate the five-year permit review and renewal process.

The Site encompasses a total of approximately 201 acres. Over the life of the facility, mining is proposed to occur on approximately 141 acres and the remaining 60 acres is setback and buffer area. Mining has been completed over the majority of the northern portion of the Site and has progressed to the south. Reclamation activity is substantially complete on the northern portion of the Site and will continue throughout the next five-year permit term in areas where mining has been completed.

Mining activity currently takes place in the southern portion of the Site. Portions of this area have been stripped in preparation for the progression of mining. Screening from Rich Valley Boulevard and from the Wicker property (an adjacent residential property) is provided with screening berms and tree/brush cover. Figure 3, Landscaping – East Property Line shows the approximate location of screening berms and tree/brush

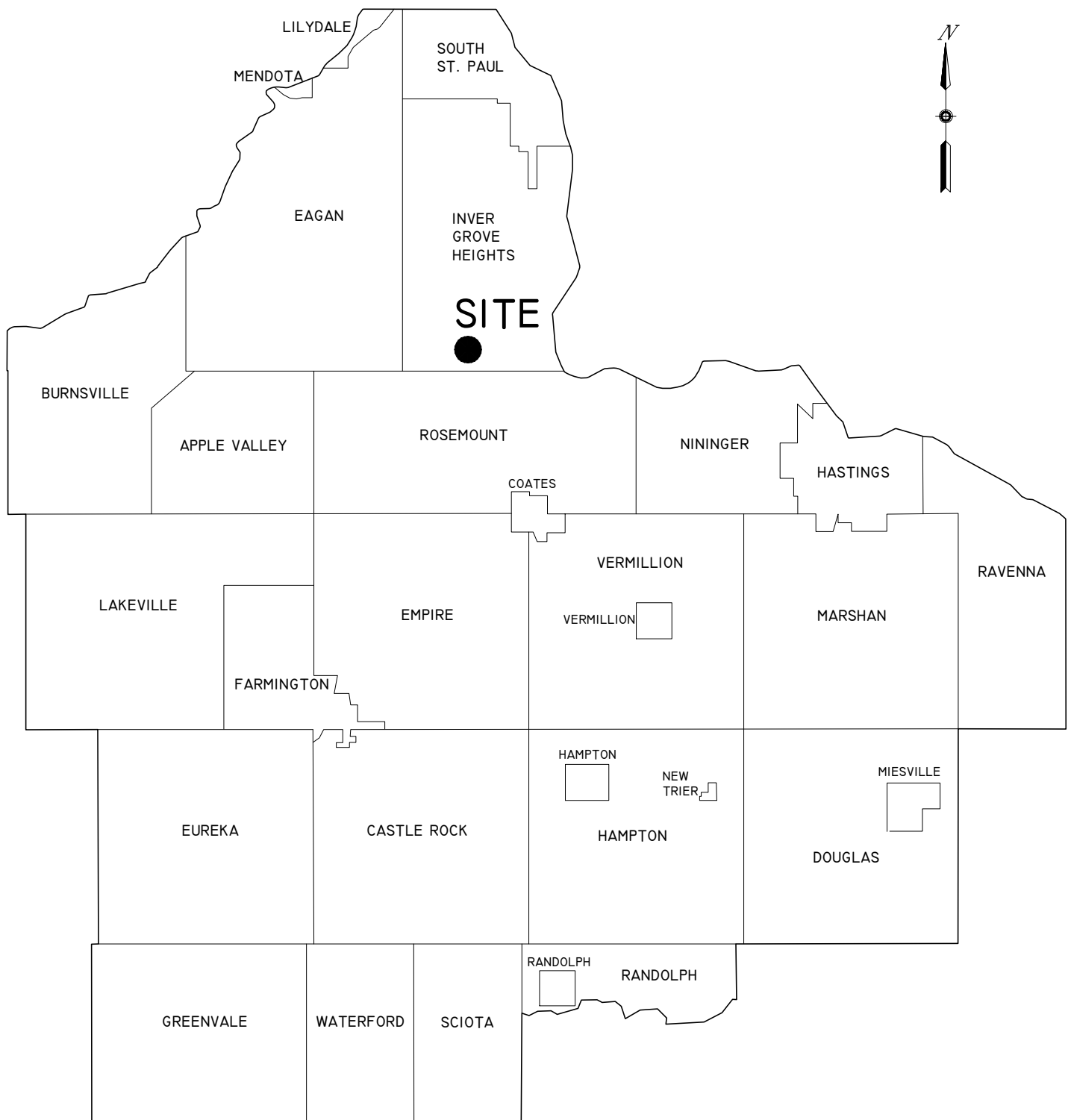


FIGURE 1 GENERAL LOCATION MAP

BITUMINOUS ROADWAYS INC.
INVER GROVE HEIGHTS GRAVEL PIT

2022 PERMIT REISSUANCE

cover. A washplant and sedimentation ponds were constructed during the 2012 permit term in accordance with the approved plans. Inactive phases of the Site continue to be used for agricultural production and open space/wooded areas. A gas pipeline runs along a portion of the southern boundary of the Site and transects the western portion of the Site. The pipeline will not be disturbed as part of the mining operations.

Surrounding land uses include agricultural production to the north (under the control of Flint Hills Resources), rural residential to the south and west, and agricultural and industrial to the east and southeast. The Site with respect to adjacent features is indicated on Figure 2, USGS Quadrangle Map Excerpt.

Specific Site features are indicated on the Existing Conditions Plan, Sheet C-1.

2. Site Ownership

The northern parcel is owned by:
Kent Peterson, LLC
1520 Commerce Drive
Mendota Heights, MN 55120
(651) 686-7001

The southern parcels are owned by:
Bituminous Roadways, Inc.
1520 Commerce Drive
Mendota Heights, MN 55120
(651) 686-7001

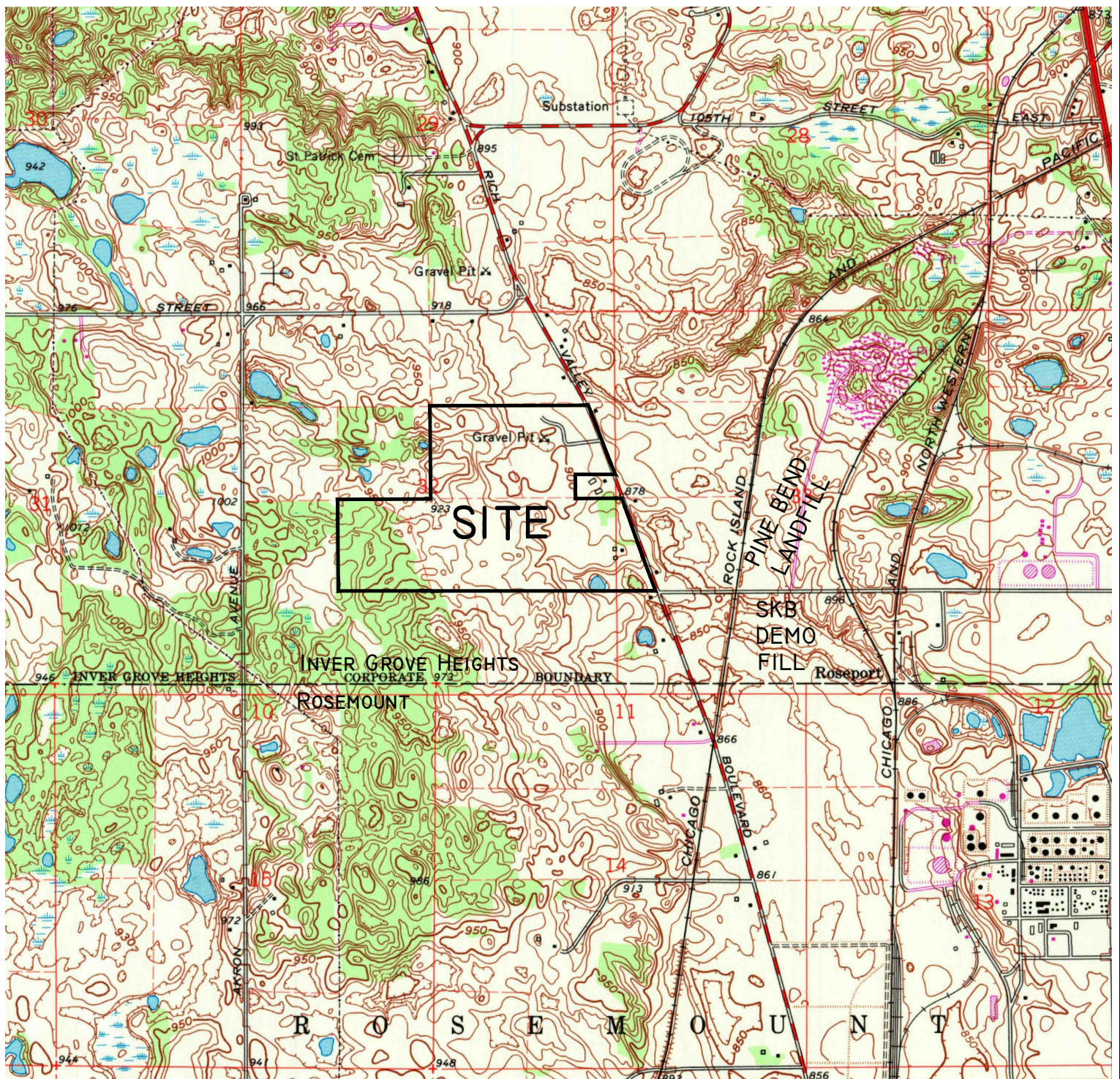
3. Site Operator

The Site is operated by:
Bituminous Roadways, Inc.
1520 Commerce Drive
Mendota Heights, MN 55120
(651) 686-7001

4. Legal Description

The legal description of the Site is as follows:

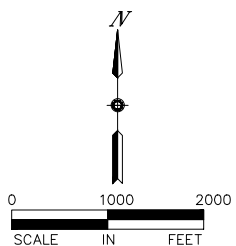
That part of the S $\frac{1}{2}$ of the NE $\frac{1}{4}$ of Section 32, Township 27, Range 22, W, lying Westerly of Rich Valley Boulevard; except that part described as follows: Commencing at the SE corner of said S $\frac{1}{2}$ of the NE $\frac{1}{4}$; thence West along the South line thereof, a distance of 592.43 feet; thence North 344.9 feet; thence East 570 feet to the centerline



Source: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE 1967
INVER GROVE HEIGHTS, MINNESOTA

FIGURE 2
USGS QUADRANGLE MAP EXCERPT

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of Rich Valley Boulevard; thence Southeasterly along said centerline, a distance of 67 feet to the East line of said S $\frac{1}{2}$ of the NE $\frac{1}{4}$; thence South 281.85 feet to the point of beginning.

And

The Northeast Quarter (NE $\frac{1}{4}$) of the Southwest Quarter (SW $\frac{1}{4}$) and the North One-Half (N $\frac{1}{2}$) of the Southeast Quarter (SE $\frac{1}{4}$), Section thirty-two (32), Township twenty-seven (27), Range twenty-two (22) AND All of that tract of land lying West of Highway Number Five (5) in the Northwest Quarter (NW $\frac{1}{4}$) of the Southwest Quarter (SW $\frac{1}{4}$), Section thirty-three (33), Township twenty-seven (27), Range twenty-two (22); subject to an easement to Minnesota Northern Natural Gas Company, as described in Deed recorded in Book 193 of Deeds, page 374.

5. Neighboring Properties

A property owner's list within 1000 feet of the Site is included in Attachment 1.

III. OPERATIONS

1. Mineral Extraction

Site operations include stripping overburden from areas to be mined. Overburden is used to create screening berms along the perimeter of the property. The depth of overburden varies across the Site from one to seven feet in thickness based on soil borings drilled over the project area. Overburden remains on-site and is later used during the reclamation process.

Aggregate is removed from the bank using a front end loader. Currently excavation is permitted to a maximum elevation of 840 feet above msl. Areas are subsequently backfilled with on-site material or imported clean soil fill to achieve the proposed reclamation grades.

BRI is requesting to mine to a maximum elevation of 800 feet above msl, the approximate groundwater elevation as determined by Barr in the 2012 Wash Water Well FAQ Report, provided in this report in Attachment 3. This will increase the depth of the mining excavation to the elevation of the groundwater (an increase of about 40 feet) to better utilize the existing resource and continue to meet current market demand. This would allow to BRI to extract up to an additional 3.4 million cubic yards of sand and gravel material over the remaining life of the mine. The additional mining depth will provide a more efficient use of this resource which is vital to meet the ongoing demand for construction aggregate in the surrounding area. The material will be available for

use in important public infrastructure projects, road improvement projects (State, County, City and local), schools, housing and other building construction needs. Mining operations at the Site will not change as part of the proposed increase in mining depth. No additional equipment will be used, no additional storage of fuel or other chemicals is proposed, and the frequency of truck trips will remain the same as current operations. The increase in mining depth is estimated to add approximately 10 years to the life of the mine.

The City of Inver Grove Heights retained Barr to review the potential environmental-related impacts of the proposed increased mining depth at the Site. The Barr Technical Review states that the proposed increase in mining depth will not change the air quality from the current operation. The report also states that the groundwater quality and quantity and surface water quality will not be negatively impacted by the change, but recommends that only non-organic fill free of contamination be used for backfill material (see Section IV. RECLAMATION for additional backfill information). Barr's Technical Review also states that there will not be any negative noise impact from the proposed change.

Many mining operations in Minnesota and Wisconsin mine to and into the groundwater. BRI is proposing to mine just to the groundwater and is not proposing dredging or dewatering operations. BRI will monitor the groundwater level to maintain excavation activity at or above the groundwater level. During reclamation activities BRI will backfill with only non-organic material that is free of contamination.

Excavation will proceed in phases as illustrated on the Phasing Plan, Sheet C-2. Each phase is estimated to represent approximately eight years' worth of mining activity. The expected duration of mining is approximately an additional thirty years, although the actual life of the Site will depend upon market demand. Cross Sections A-A', B-B' and C-C' Sheets C-3 through C-5 illustrate the sand and gravel deposit, maximum mining depth, reclamation grades, and existing grades.

2. Processing

Excavated material is loaded into a feed bin and conveyed to the screening area and wash plant. Material is screened and washed and conveyed into product stockpiles. Oversized rock is screened and conveyed to a stockpile in the processing area to be crushed at a later date. Material is then transported to the northern portion of the Site for additional processing. Material is transported from the active face to the processing area using conveyors and/or off road haul trucks. Crushing operations occur at the Site approximately once per year for a duration of about 3-4 weeks and is performed by an

outside contractor. Processing includes crushing, washing, screening, sorting and blending into a variety of aggregate products. The majority of the material produced is used in the production of asphalt mix at the on-site asphalt plant.

Recycling of concrete and asphalt occurs in the northern portion of the Site. The material is hauled to the Site and stockpiled. These materials are crushed periodically and blended into specific aggregate products. Crushing occurs on the Site as described above. The combined volume of concrete material to be crushed and the crushed concrete stockpile is not allowed to exceed 50,000 cubic yards. Asphalt is crushed and used on-site in various asphalt mixes. Crushing associated with the recycling operation is restricted to no more than 12 weeks of operation during the calendar year and is subject to limited hours of operation as described in item 4 below.

Manufactured organic shingle scrap (MOSS) recycling is no longer processed at the Site.

A washplant is operated full time on the Site. A washplant is a structure that is composed of a series of screens and spray bars. As aggregate is passed through the plant it is sprayed with water to remove fine sand and silt from the aggregate. The washwater contains no chemicals or additives. After the washwater passes through the plant, it is discharged into a series of sedimentation ponds. The sedimentation ponds allow for the fine sediment to settle out of the washwater. Treated washwater is recycled back to the wash plant from the final sedimentation pond for reuse.

The washplant and sedimentation pond area was updated in 2013. A Water Appropriations Permit was obtained from the DNR and a new production well was drilled as part of the washplant updates. A series of sedimentation ponds treat the washplant discharge removing suspended fine sediment and then the treated washwater is recycled back to the plant. The production well supplies make up water to the clean water intake pond and operates for a maximum of 12 hours per day on a seasonal basis.

BRI has provided a voluntary well interference protocol agreement with neighboring properties within ½ mile of the well requesting to be a party thereto. The agreement stipulates procedures to follow if a well interference issue should occur.

Above Ground Asphalt Cement Storage

In 2020 BRI obtained all applicable permits for and constructed an above ground asphalt cement tank storage system. The system includes three 48 feet high 65-80 foot diameter carbon steel above ground tanks and associated piping to store a total of 5.3 million gallons of asphalt cement. The system also includes a secondary containment

system along with a fire protection system. BRI operates the asphalt cement tank system in accordance with all required permits and State and Federal laws.

Typically, the storage tanks will be filled with asphalt cement during the winter months, when market conditions are favorable. Asphalt cement will be transported to the Site in tanker trucks and pumped from the tanker trucks into the storage tanks. During the construction season, asphalt cement will either be pumped from the storage tanks and transferred directly to the adjacent asphalt plant or pumped into tanker trucks for distribution to BRI's other asphalt production facilities.

3. Fencing

Portions of the Site adjacent to steep slopes are fenced with six-foot high chain link fencing. Fencing is illustrated on the Existing Conditions Plan C-1.

4. Hours of Operation

The Site is currently permitted to operate all activities, except crushing concrete and asphalt recycle material, including mining, grading, crushing and screening of aggregate, washing, movement of vehicles into and out of the Site, and operation of the asphalt plant between the hours of 7 a.m. and 7 p.m. Monday through Saturday. An additional hour from 6 a.m. to 7 a.m. Monday through Saturday is permitted for internal operations only, including start-up of the asphalt plant and allowing BRI owned vehicles that were parked overnight to exit the Site. Concrete and asphalt recycle crushing activity only occurs between the hours of 7 a.m. – 7 p.m., Monday – Friday, and 9 a.m. – 6 p.m., Saturday. Concrete and asphalt recycle crushing will be limited to no more than 12 weeks during the calendar year and there will be no crushing on Sunday.

The asphalt plant is permitted to operate a maximum of 30 night shifts from the hours of 7 p.m. – 7 a.m., during the construction season each year. Night shifts are required with certain jobs, especially State Highway work. BRI provides the City with written notice prior to each event so a record can be kept to monitor the total number of nights work.

BRI also notifies their closest neighbor, Todd Wicker, prior to night shift work. Mr. Wicker's house is approximately 600 feet from the plant's driveway and approximately 800 feet from the asphalt plant itself. The next nearest occupied residence is approximately 2,000 feet from the plant. BRI has never received any noise or disruption complaints from neighbors regarding night shift operations.

In late 2018 the City of Inver Grove Heights retained Barr Engineering Company (Barr) to perform a noise assessment of the BRI Site to evaluate noise levels from BRI's operations reaching nearby residences. Monitoring for the study was performed in August of 2018. The noise assessment included noise monitoring at the western edge of the Site and an assessment of the data. The report stated that there were no hours where noise levels were above the state residential daytime or nighttime thresholds. Barr concluded in the November 29, 2018 Technical Memorandum that "Monitoring of noise at the western edge of the Bituminous Roadways property indicates that conditions at nearby residences are likely in full compliance with state noise standards. Levels were below the state nighttime noise standards for all hours monitored. Bituminous Roadways' operation on Rich Valley Boulevard does not appear to significantly affect overall noise levels at the residences to the west as the observed cyclical daily noise pattern occurred on days both with and without Bituminous Roadways in operation." The Technical Memorandum for the Bituminous Roadways Noise Assessment, by Barr Engineering Co. dated November 29, 2018 is provided as Attachment 4 in this report. The noise emissions from the Site meet or are below the state nighttime noise standards.

5. Setbacks

Stripping, excavation, processing, stockpiling and sedimentation ponds are setback a minimum of 50 feet from all property lines and gas pipelines, a minimum of 75 feet from the right-of-way line of County Road 71 (Rich Valley Boulevard) and a minimum of 300 feet from adjacent residential structures. Setbacks are indicated on the Phasing Plan, Sheet C-2.

6. Site Access

The main Site is accessed at the north-east corner of the Site off of County Road 71 (Rich Valley Boulevard). The entrance to the Site is paved for at least 75 feet. The haul routes are currently Rich Valley Boulevard north to Cliff Road and Rich Valley Boulevard south to 117th Street. Average daily traffic generated from the Site is approximately 150 truck trips per day. Levels of production are expected to remain fairly consistent over the course of the next permitting period.

The majority of the truck traffic for the asphalt cement tank operation will be generated during the construction off-season during the winter months when the storage tanks are filled. Estimated average daily traffic will be 40 loads (80 trips) per day and 4 loads (8 trips) per hour for up to 25 days during the winter months. Peak hourly traffic generated during the winter months is 8 trips per hour as the filling process can't occur at a faster rate to accommodate more loads. Filling all three tanks will require

approximately 25 ten-hour days of hauling. Traffic generation is based on the capacity of the pump used to unload the trucks which results in about 15 minutes needed to unload each truck. Typically, the tanks will be filled one time per year.

BRI utilizes the north access as the primary access, but keeps the south-east access off of Rich Valley Boulevard as a secondary access to be used intermittently. During the 2012 year renewal period the old farmhouse that was located in the south-east corner of the Site was removed. The driveway associated with this farmhouse remains. The secondary access was previously the driveway for the farmhouse on the Site. The south access has been widened and resurfaced with crushed concrete approximately 200 feet into the Site. The north access is the primary Site access and the southern access is used for up to 10 percent of the Site truck traffic. Haul routes will remain the same as previously permitted and as described above.

7. Landscaping

The setback areas on the Site will be landscaped in accordance with the approved landscape plans (see Figures 3, 3A and 3B). Landscaping includes the establishment of berms along Rich Valley Boulevard and along portions of the southern setback area of the Site. A portion of the berms along the southern setback area and along Rich Valley Boulevard have been constructed and vegetation established.

8. Weed Control

Weeds or other unsightly or noxious vegetation shall be controlled as necessary to maintain a neat appearance of the Site.

9. Wetlands

There are no wetlands located on the Site. There are two low areas on the southern portion of the Site that were indicated as wetland basins in the National Wetland Inventory. A field delineation of the wetland basins was performed by SEH and it was determined that neither area meets the criteria for a jurisdictional wetland determination. A copy of the SEH report is included as Attachment 5.

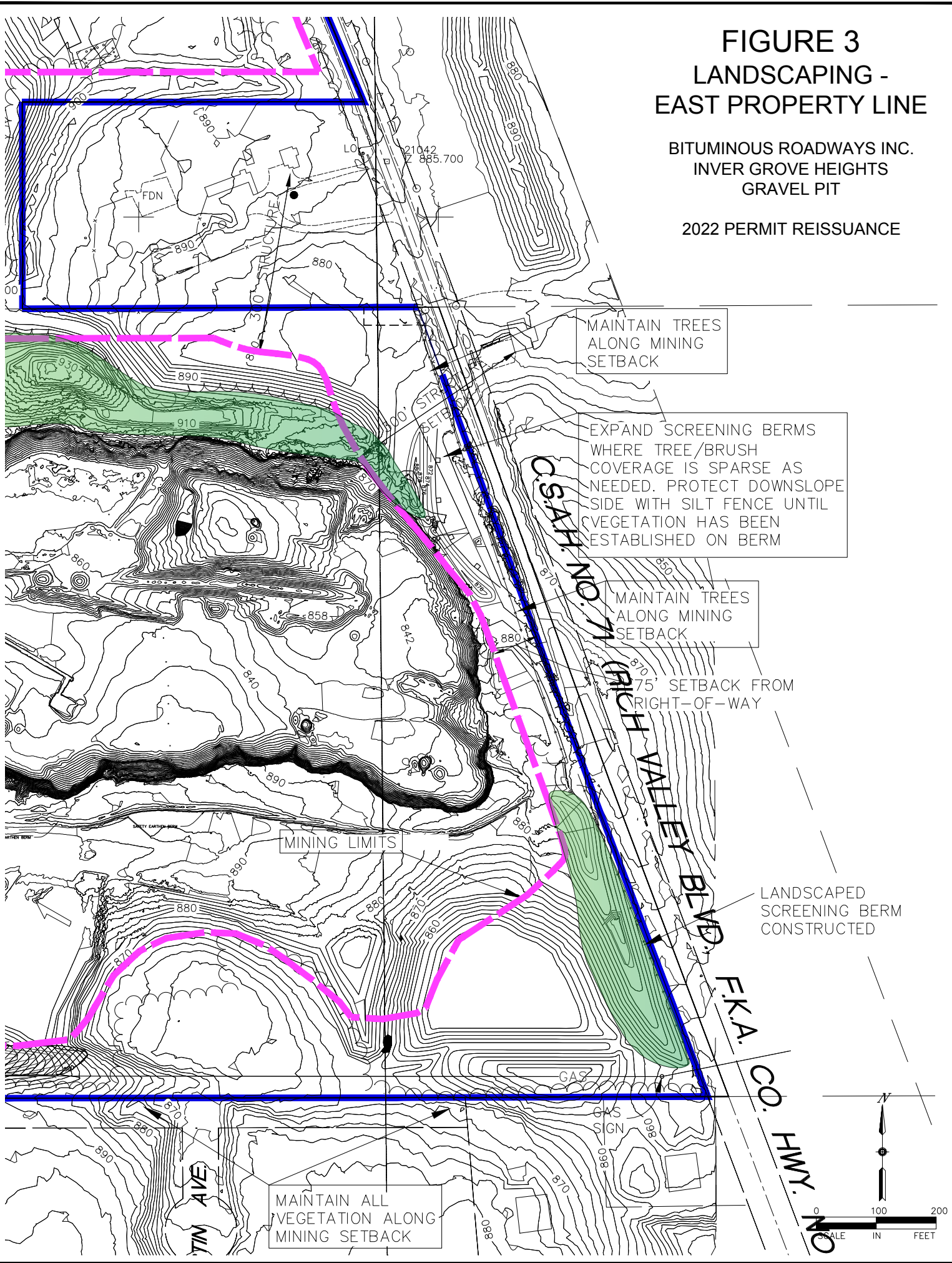
10. Stormwater Management

Stormwater calculations for the 2, 10, and 100 year events from pre and post mining conditions, as well as a long term yield model for the Site using precipitation data from the last thirty years to establish high water levels for the proposed future ponding areas were submitted as part of the past permitting applications. These studies are still applicable and are provided in Attachment 6.

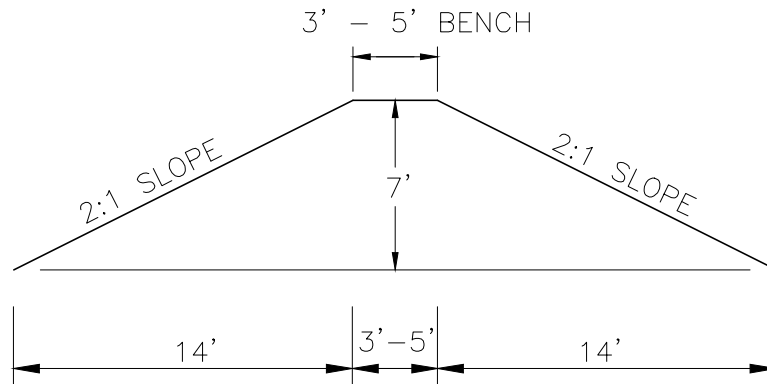
FIGURE 3
LANDSCAPING -
EAST PROPERTY LINE

BITUMINOUS ROADWAYS INC.
INVER GROVE HEIGHTS
GRAVEL PIT

2022 PERMIT REISSUANCE



NO SCALE



SEED BERM ACCORDING TO SPECIFICATIONS:

In areas to be permanently seeded, use native seed mixture equivalent to MNDOT No. 350. Apply seed mixture at a rate of 94.7 kg per hectare (84.5 lbs per acre) in accordance with MNDOT Standard Spec. 2575. Incorporate a Type 3 fertilizer (slow release type with 10 week residual) consisting of 22-5-10 (%N-P-K) into the soil at an application rate of 392 kg per hectare (350 lbs per acre) by disking prior to seeding.

Establish native seed mix in accordance with MNDOT Standard Spec. 2575.3. Use a Truax type, or equal interseeder drill with at least two seed boxes: a small/fine seed box and a large/fluffy seed box. Drill large/fluffy seeds to a final planting depth of 10 mm (1/2 inch) to 25 mm (1 inch) deep from the large/fluffy seed box. Split the drill rates in half and make two passes over the site in order to decrease competition in drill rows. Scatter small/fine seeds over the soil surface by drop-seeding from the small/fine seed box, or broadcast. Coordinate with the seed vendor to keep the large/fluffy seeds separate from the small/fine seeds so that they may be installed from separate seed boxes. Lightly harrow or rake the site following the seeding operation. Pack the site following harrowing in order to ensure a firm seed-bed.

Comply with the requirements of MNDOT Standard Spec. Table 2575-1 for season of planting native seed mixtures. The appropriate dates for spring seeding are from April 15 through July 20. Fall seeding dates are from September 20 to October 20. Dormant seeding dates are from October 20 to November 15. Dormant seeding will only be allowed if the maximum soil temperature at a depth of 25 mm (1 inch) does not exceed 10 degrees C (50 degrees F) in order to prevent germination.

In seeded areas with slopes equal to or flatter than 3:1, apply MNDOT Standard Spec. 3882 Type 1 mulch uniformly over the soil surface by hand or machine within 24 hours after seeding in accordance with MNDOT Standard Spec. 2575.3. Apply mulch at a rate of 4.5 metric tons per hectare (2 tons per acre). Immediately after placement, anchor all mulch material into the soil by crimping (straight disking) in a direction perpendicular to that of the overland storm water flow. Punch the mulch into the soil to a depth of 2 to 3 inches with a disk spacing of 8" or less.

FIGURE 3B SCREENING BERMS

11. Tree Preservation

The existing woods located west of the gas pipeline will not be impacted by mining or reclamation grading. Trees and vegetation within the 300 foot setback from existing structures will also remain undisturbed. Existing trees in the setback area along the southern portion of the Site have been undisturbed and provide screening of Site operations. Additional trees may be planted as the proposed topsoil screening berm along the south property line is expanded to the west in accordance with the previously approved landscaping plans (see Figures 3, 3A and 3B, Landscaping).

12. Dust Control

Dust is controlled at the Site by utilizing the existing paved Site entrance. Interior haul roads are watered as needed in order to minimize dust from vehicular travel within the Site. Screening berms are vegetated.

13. Noise Control

The Site must operate in compliance with State noise standards. Vehicles and equipment are operated with standard noise reduction features such as mufflers. Perimeter berms and operation of equipment in the recessed portion of the Site also help to reduce noise emissions from the Site.

During the original permitting phase of the southern portion of the Site, Barr Engineering modeled anticipated noise generation from the Site based on topography, equipment to be operated and location of adjacent residences or receptors. The modeling results and applicable noise standards were discussed in detail in the EAW. The noise analysis predicted that the Site will operate below noise standards established by the Minnesota Pollution Control Agency for residential areas both during stripping operations which occur at grade and during mining operations when equipment is recessed on the floor of the mining operation and the active bank provides noise mitigation.

Barr's analysis also noted that back up alarms will likely be audible at the nearest residences particularly when there is a light northern wind and little other background noise. Although the noise may be audible, it does not represent a predicted exceedance of state standards. Back up alarms are a requirement of Mining Safety and Health Administration (MSHA). Back up alarms are intentionally loud and audible and are required in order to ensure the protection of on-site workers.

In late 2018 the City of Inver Grove Heights retained Barr Engineering Company (Barr) to perform a noise assessment of the BRI Site to evaluate noise levels from BRI's

operations reaching nearby residences. Monitoring for the study was performed in August of 2018. The noise assessment included noise monitoring at the western edge of the Site and an assessment of the data. The report stated that there were no hours where noise levels were above the state residential daytime or nighttime thresholds. Barr concluded in the November 29, 2018 Technical Memorandum that "Monitoring of noise at the western edge of the Bituminous Roadways property indicates that conditions at nearby residences are likely in full compliance with state noise standards. Levels were below the state nighttime noise standards for all hours monitored. Bituminous Roadways' operation on Rich Valley Boulevard does not appear to significantly affect overall noise levels at the residences to the west as the observed cyclical daily noise pattern occurred on days both with and without Bituminous Roadways in operation." The Technical Memorandum for the Bituminous Roadways Noise Assessment, by Barr Engineering Co. dated November 29, 2018 is provided as Attachment 4 in this report.

14. Lighting

There is no lighting within the active mining area. There are a total of 12 exterior lights associated with security for the asphalt plant and contractors yard. Exterior lights are located as follows:

- 2 - Rainbow shop
- 1 - East scale house
- 3- Top of small asphalt cement tanks at plant
- 2- Top of silos at plant
- 2- Top of large asphalt cement storage tanks
- 2- Top of truck loadout scale

15. Groundwater Monitoring

In accordance with the permit, groundwater monitoring is conducted every other year at the on-Site well (known as the "Rainbow well") and at the Todd Wicker and Robert Plan properties. Monitoring of the on-site surface water ponds is also conducted every other year. The groundwater testing map is provided in Figure 4 of this report. Ground water (well) and surface water pond samples are analyzed for both diesel range organics (DRO) and gasoline range organics (GRO) and for arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, phenol, pH, electric conductivity and alkalinity. Results are submitted to the City.

The results from the last five years show that sample concentrations for both GRO and DRO in the on-site and neighboring groundwater wells are below the detection limit and reporting limit. Results from the sample concentrations of the on-site stormwater ponds

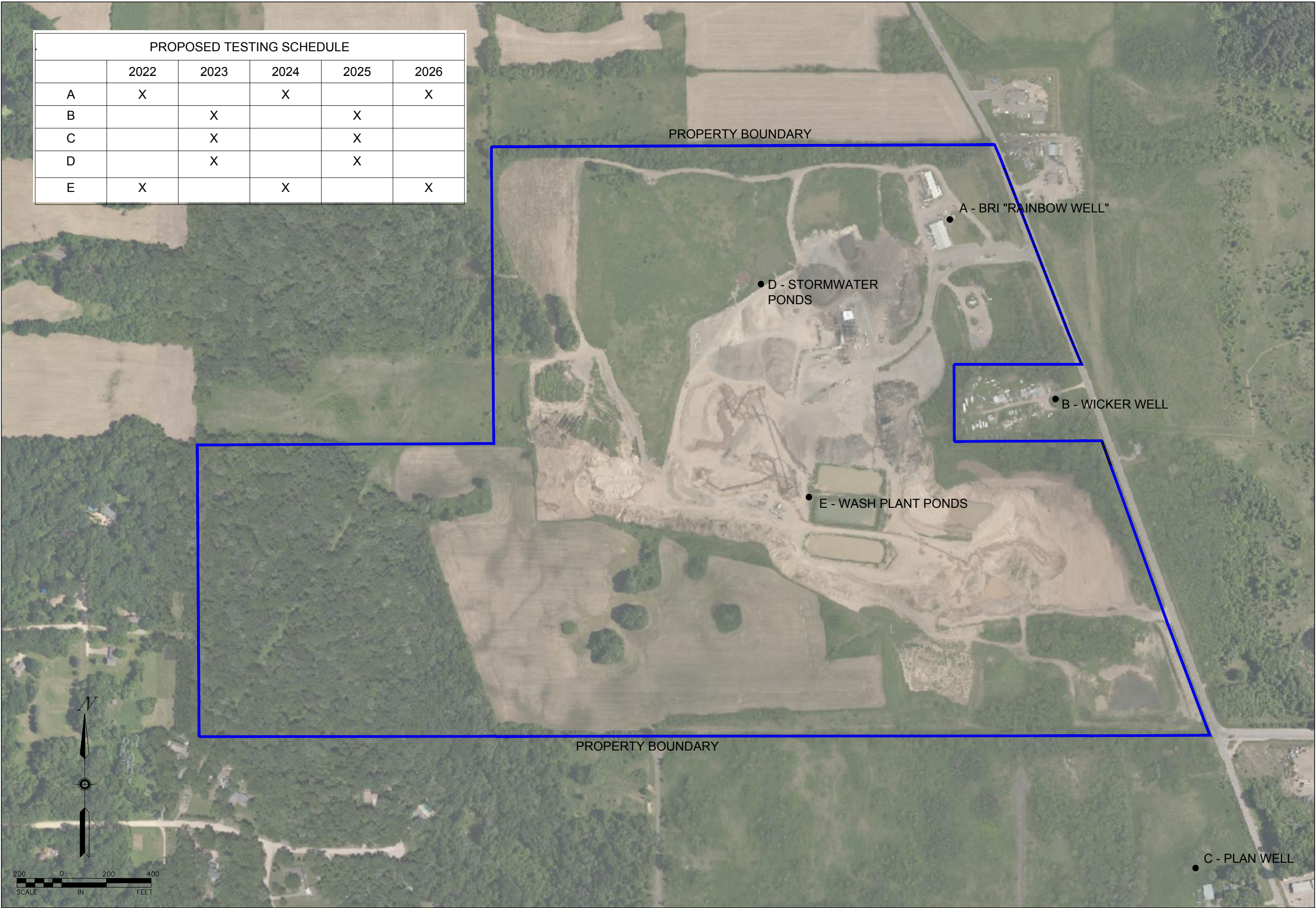
and wash plant ponds for GRO are below the detection limit and reporting limit. Results from the sample concentrations of the on-site stormwater ponds and wash plant ponds for DRO are above the reporting limit, but below the “action level”, for surface water and drinking water standards, of 1 mg/L at which point a Remedial Investigation (RI) per MPCA Guidance Document 4-01 (Petroleum Remediation Program) would be warranted. The results from all the wells and surface waters show that the concentrations of barium, cadmium, chromium, nickel, selenium, silver, zinc, and phenol were all below the Health Risk Limit (HRL) established by the Minnesota Department of Health. The sample concentrations of arsenic and mercury were below the Maximum Contaminate Level (MCL) (HRLs have not been established for arsenic or mercury), which is a federal standard for the lowest concentration at which a particular contaminant is believed to be a potential health concern. The sample concentrations for lead and copper were both below the “action level” (HRLs or MCLs have not been established for lead or copper).

An existing well associated with the farmstead on the Site has been sealed in accordance with Dakota County Ordinance No. 114 and the Minnesota Department of Health.

16. Volumes

The volume of in-place material to be removed from the Site within all of Phases 1-5 is approximately 8 million cubic yards to the current maximum excavation elevation of 840 feet above msl. Approximately 1.5 million cubic yards have been removed from the Site as part of Phase 1 mining and approximately 1.5 million cubic yards have been removed from the Site as part of Phase 2 to date. BRL is requesting to increase the mining depth by about 40 feet to elevation 800 feet above msl for the remaining mining phases. The volume of additional in-place material is approximately 3.4 million cubic yards from elevations 840-800 feet above msl. The total lifetime volume of in-place material would increase to about 11.4 million cubic yards. The life expectancy of the Site will depend upon the future economy and aggregate demand in the metropolitan area. Reports by the Metropolitan Council, Minnesota Geologic Survey and Minnesota Department of Natural Resources indicate that the supply of aggregate materials in the metropolitan area is rapidly being depleted. However, the vitality of the economy and the construction industry impact market demand which varies from year to year. With the additional 40 feet of mining depth, the remaining mining life of this Site is estimated to be approximately 30 years.

PROPOSED TESTING SCHEDULE					
	2022	2023	2024	2025	2026
A	X		X		X
B		X		X	
C		X		X	
D		X		X	
E	X		X		X



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BITUMINOUS
ROADWAYS INC.
INVER GROVE HEIGHTS
GRAVEL PIT

2017 PERMIT
REISSUANCE

DATE	REVISION
10/16/17	Add Wash Plant Pond to Testing Schedule
08/05/22	2022-2026 SCHEDULE

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Kirsten Pauly
Kirsten Pauly
DATE: 08/05/22 REG. NO.: 21842

INFORMATION:	
PROJECT NO.:	87-185
DRAWN BY:	mw
CHECKED BY:	kp
APPROVED BY:	kp
SCALE:	graphic
DATE:	09/05/17

DESCRIPTION:

WATER TESTING
MAP

SHEET NO.

FIGURE 4

17. Permits

In addition to the local permits required by the City of Inver Grove Heights, which include the Conditional Use Permit and Land Alteration Permit, the Site must operate in compliance with other state and federal regulations. The Site operates under a NPDES Stormwater Permit and Air Emissions Permit issued by the MPCA, a Minnesota DNR Water Appropriations Permit, a Dakota County Hazardous Waste Generators License and Processing License, and a MPCA Permit for Storage of Liquid Substances at a Major Aboveground Storage Tank Facility

All reports which are required to be submitted to the MN DNR for the Water Appropriations Permit including annual water usage report, Dakota County for the Hazardous Waste Generators License and the Processing License, and the MPCA, including annual emissions inventory report, semi-annual deviations report, annual compliance certification report, and annual report will also be submitted to the City. The Site also operates under a Spill Prevention Control and Countermeasures (SPCC) Plan. The SPCC Plan documents practices, personnel, equipment, and resources available to prevent a spill and what actions to take if a spill were to occur.

IV. RECLAMATION

1. Phasing

Reclamation is conducted in phases at the Site. As portions of the mining area are completed, the areas are backfilled, graded, topsoil applied and vegetation established. During the past five year permit period, substantial reclamation activity has been completed in the northern portion of the Site. The Reclamation Plan, Sheet C-6 illustrates the reclamation grades that will be established at the Site upon conclusion of mining. The Phasing Plan, Sheet C-2 illustrates areas where reclamation has been completed. Reclamation activities will leave the Site in a state that will prepare it for final development.

2. Grades and Backfill Material

Areas within the northern portion of the Site have been backfilled, sloped and vegetated. Reclamation activities will continue in areas where mining has been completed. Reclamation activities in these areas will include continued backfilling and sloping.

Along the perimeter of the excavation limits, backfilling will be required to achieve a maximum 4:1 final slope previously approved by the City of Inver Grove Heights. The processing and stockpile area will remain open and active. Reclamation grades for the southern portion of the Site will be graded to a maximum slope of 10:1 as indicated on the Reclamation Plan, Sheet C-6.

Backfill Material:

Clean backfill material will be brought to the Site from local construction projects to be used for establishment of reclamation grades. The majority of materials will be from BRI construction projects. Backfill material may also include on-site excess mining materials unsuitable for sale or use in asphalt mix. All backfill material used in reclamation activities will be clean, compactable, natural earthen material free of debris or contamination.

As recommended in the Barr Technical Review, backfill material will consist of only non-organic compactable soil material that is free of contamination, recycled or salvaged aggregate, asphaltic pavement, crushed concrete, scraps of shingles, debris, rubbish, frozen soil, boulders over 1-inch in diameter, logs, wood chips or other objectionable material. Contaminated soil will not be used as fill or brought to the site. Soils will not be allowed to be imported for reclamation backfilling if the source of imported fill is from a location where soil contamination is known, suspected, or can be expected (e.g., soils from gas stations, certain industrial sites, etc.).

BRI will maintain a manifest from each off-site soil source indicating where soils are imported from. The manifest will include a statement that no contaminants are suspected to be in the soil material, information regarding location of where the soils are placed on Site, and an approximate volume of material imported. Records will be maintained by BRI and made available to the City upon request.

If site grading is performed during cold weather, all snow and ice will be removed from cut and fill areas prior to additional grading. No fill will be placed on frozen subgrades. No frozen soils will be used as fill.

3. Topsoil

Topsoil capable of establishing and supporting vegetation, will be placed as areas are reclaimed. Topsoil will be replaced to a minimum depth of six inches. Backfilled and graded areas will be seeded and mulched to establish vegetation, stabilize slopes and minimize erosion.

4. Removal of buildings

Within three months after completion of the sand and gravel mining operation any buildings or structures which have been established on the Site as an accessory to the mining operation will be removed. Permanent structures which conform to the permanent zoning district requirements in which they are located, may remain on-site.

5. Bond

A reclamation bond has been posted with the City of Inver Grove Heights to ensure that the Site is properly reclaimed upon completion of mining activity. Final use of the property will be consistent with the zoning and subdivision ordinances in effect at the time of final development. According to the City of Inver Grove Heights 2040 Comprehensive Plan dated October 2019 the current land uses are Industrial and Vacant/Agricultural with a sand and gravel overlay and the future land use is designated Rural Density Residential. It is possible that this area will be serviced by sanitary sewer at the time of final development. Even if this area is not within the Metropolitan Urban Service Area (MUSA) at the time of final development, previous drain field design and percolation testing within Inver Grove Heights have shown that septic systems and drain fields can be properly designed in areas previously disturbed by grading and earth moving activities in areas with permeable sand and gravel soils. Another option would be to provide a community drain field design in an undisturbed portion of the Site. In this situation, individual septic tanks could be pumped up to a larger drain field serving all of the residential uses on the Site.

V. PLAN SET

Operations are described in detail within this report. The following plans have been prepared which help to illustrate the Site operations.

1. 2021 Aerial: A-1

2. Existing Conditions: C-1

This plan illustrates pertinent Site features including the Site boundary, existing topography, utilities, easements, wooded areas, and existing on-Site and adjacent buildings.

3. Phasing Plan: C-2

The Phasing Plan illustrates the sequence of mining and reclamation activities which are proposed to occur on the Site.

4. Cross-Sections: C-3, C-4, C-5

Cross Sections have been prepared for the Site and are included as Figures C-3, C-4 and C-5. These cross sections illustrate the existing elevation, proposed reclamation grades, depth of topsoil, maximum mining elevation and extent of sand and gravel deposit on Site.

5. Reclamation Plan: C-6

This plan illustrates the end use grades for the Site, limits of mining, and setbacks. Final grades have been designed at a maximum 10:1 slope for the southern portion of the Site and a maximum 4:1 slope as previously approved for the northern portion of the Site.



10830 NESBITT AVENUE SOUTH
BLOOMINGTON, MINNESOTA 55437
(952) 881-3344 TELEPHONE
(952) 881-1913 FAX
www.sundecivil.com

BITUMINOUS
ROADWAYS INC.
NVER GROVE HEIGHTS
GRAVEL PIT

2022 PERMIT
REISSUANCE[illegible]

I HEREBY CERTIFY THAT THIS PLAN,
SPECIFICATION, OR REPORT WAS PREPARED
BY ME OR UNDER MY DIRECT SUPERVISION
AND THAT I AM A DULY LICENSED
PROFESSIONAL ENGINEER UNDER THE LAWS
OF THE STATE OF MINNESOTA.

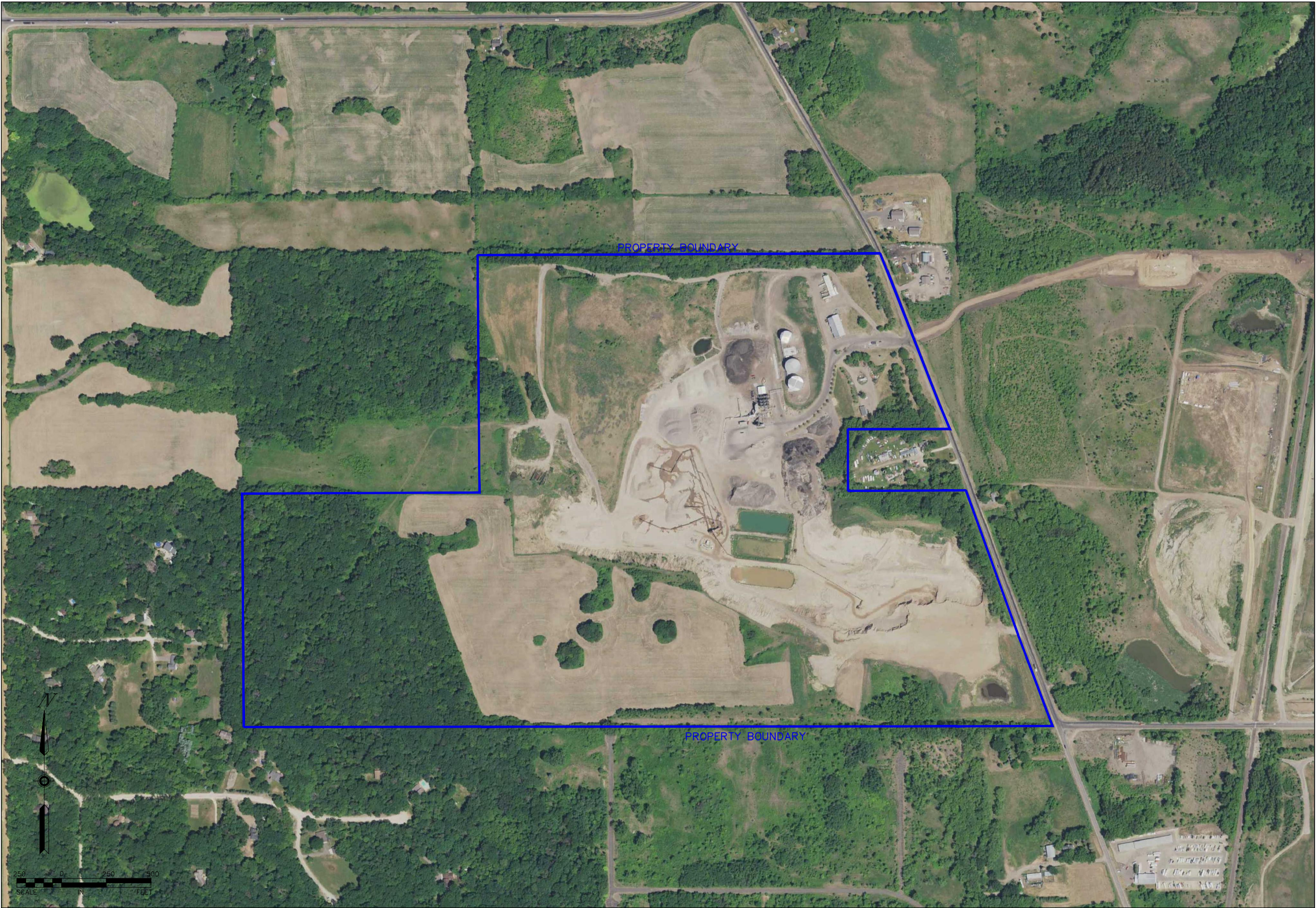
Kirsten Pauly
Kirsten Pauly

INFORMATION:	
PROJECT NO.:	87-185
DRAWN BY:	mw
CHECKED BY:	kp
APPROVED BY:	kp
SCALE:	graphic
DATE:	08/05/2022
DESCRIPTION:	

2021 AERIAL

SHEET NO:

A-1



TOPOGRAPHY IN THE CENTRAL PORTION
OF SITE FROM DRONE SURVEY BY USA
DRONE, DATED 12/20/22.

TOPOGRAPHY OF THE NORTHERN AND
SOUTHERN PORTION OF SITE FROM 2016
LIDAR DATA.

BOUNDARY INFORMATION FROM SUNDE
LAND SURVEYING, LLC.

MINNESOTA NORTHERN
NATURAL GAS COMPANY
12" PIPELINE.
APPROXIMATE LOCATION
ONLY. FIELD VERIFY.

PROPERTY
BOUNDARY

MINING LIMITS
50' SETBACK
FROM PIPELINE

APPROXIMATE
EDGE-OF-TREES

APPROXIMATE
EDGE-OF-TREES

APPROXIMATE
LOCATION OF
EXISTING TREES

WASHPLANT
OPERATIONS AREA

HIGH
CAPACITY
WELL

APPROXIMATE
LOCATION OF
EXISTING TREES

EXISTING TOPSOIL
SCREENING BERM

LOW AREAS ARE NOT
JURISDICTIONAL WETLANDS
PER WETLAND REPORT BY
SEH DATED MAY 20, 2002.

PLAN WELL

EARTHEN
SAFETY BERM

SLOPED AND VEGETATED

STORMWATER
PONDS

SLOPED AND VEGETATED

EXISTING TOPSOIL
SCREENING BERM
(Approx. 40,000 CY)

ASPHALT CEMENT
TANK STORAGE AREA

METAL BUILDING
SALT STORAGE

"RAINBOW WELL"

EXISTING
DRAINFIELD AND
SEPTIC TANK

PRIMARY
SITE ACCESS

SLOPED AND VEGETATED

BRI WELL

ASPHALT TESTING
BUILDING

EXISTING DRAINFIELD
AND SEPTIC TANK

ASPHALT PLANT
OPERATIONS AREA

WICKER WELL

EXISTING TOPSOIL
SCREENING BERM

WASHPLANT
SUPPLY PONDS

CURRENT CONVEYOR
PLACEMENT FOR
MINING SAND/ROCK

SECONDARY
SITE ACCESS

EXISTING TOPSOIL
SCREENING BERM

ACTIVE
MINING

CSA# NO. 7 (ROCK VALLEY BLD. FKA CO. HWY. NO. 5)

SAFETY FENCE

17TH ST EAST

ARNOLD AVE

AUSTIN AVE

N

200 0 200 400
SCALE IN FEET



CONSULTING CIVIL ENGINEERS
10830 NESSBITT AVENUE SOUTH
BLOOMINGTON, MINNESOTA 55437
(952) 881-3344 TELEPHONE
(952) 881-1913 FAX
www.sundecivil.com

BITUMINOUS
ROADWAYS INC.
INVER GROVE HEIGHTS
GRAVEL PIT

2022 PERMIT
REISSUANCE

DATE REVISION

I HEREBY CERTIFY THAT THIS PLAN,
SPECIFICATION, OR REPORT WAS PREPARED
BY ME OR UNDER MY DIRECT SUPERVISION
AND THAT I AM A DULY LICENSED
PROFESSIONAL ENGINEER UNDER THE LAWS
OF THE STATE OF MINNESOTA.

Kirsten Pauly
Kirsten Pauly
DATE: 8/5/2022 REG. NO.: 21842

INFORMATION:

PROJECT NO.: 87-185

DRAWN BY: mw

CHECKED BY: kp

APPROVED BY: kp

SCALE: graphic

DATE: 08/05/2022

DESCRIPTION:

EXISTING
CONDITIONS

SHEET NO.

C-1

TOPOGRAPHY IN THE CENTRAL PORTION
OF SITE FROM DRONE SURVEY BY USA
DRONE, DATED 12/20/22.

TOPOGRAPHY OF THE NORTHERN AND
SOUTHERN PORTION OF SITE FROM 2016
LIDAR DATA.

BOUNDARY INFORMATION FROM SUNDE
LAND SURVEYING, LLC.

MINNESOTA NORTHERN
NATURAL GAS COMPANY
12" PIPELINE.
APPROXIMATE LOCATION
ONLY. FIELD VERIFY.

WOODED AREA. NO
AGRICULTURAL RUNOFF.
NO DIVERSION BERM
NEEDED.

DIVERSION BERM

SLOPED AND VEGETATED

STORMWATER
PONDING AREA

SLOPED AND VEGETATED

METAL BUILDING
SALT STORAGE

"RAINBOW WELL"
ACTIVE

PRIMARY ACCESS

SLOPED AND VEGETATED

BRI WELL ACTIVE

ASPHALT PLANT
OPERATIONS AREA

SWICKER WELL

N LINE OF NW 1/4 OF SW 1/4
OF SEC. 33, T. 27, R. 22

ROAD LOCATION TAKEN FROM
80018028.DWG BASED ON
OLD SECTION BREAKDOWN.
ROAD LOCATION NEEDS TO
BE VERIFIED.

SECONDARY ACCESS

33

S LINE OF NW 1/4 OF
SW 1/4 OF SEC. 33

LOW AREAS ARE NOT
JURISDICTIONAL WETLANDS
PER WETLAND REPORT BY
SEH DATED MAY 20, 2002.

PLAN WELL
ACTIVE



CONSULTING CIVIL ENGINEERS
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INVER GROVE HEIGHTS
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DATE REVISION

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OF THE STATE OF MINNESOTA.

Kirsten Pauly
Kirsten Pauly
DATE: 8/5/2022 REG. NO.: 21842

INFORMATION:

PROJECT NO.: 87-185

DRAWN BY: mw

CHECKED BY: kp

APPROVED BY: kp

SCALE: graphic

DATE: 08/05/2022

DESCRIPTION:

PHASING PLAN

SHEET NO.

C-2



200 0 200 400
SCALE IN FEET

#

T. , R. , S.

DRAWING: \\kirstensoldpc\DWG\Bituminous Roadways IGH\2022 Permit Reissuance\C2 - Phasing Plan.dwg

LAYOUT: C-2 Phasing Plan

XREF: 2000005A001-ESMT_05162011; XREF: 2022 basemap surface contours; XREF: USA Drone Topo



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ROADWAYS INC.
INVER GROVE HEIGHTS
GRAVEL PIT

2022 PERMIT
REISSUANCE[illegible]

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PROFESSIONAL ENGINEER UNDER THE LAWS
OF THE STATE OF MINNESOTA

Kirsten Pauly
DATE: 8/5/2022 REG. NO.: 2184

INFORMATION:

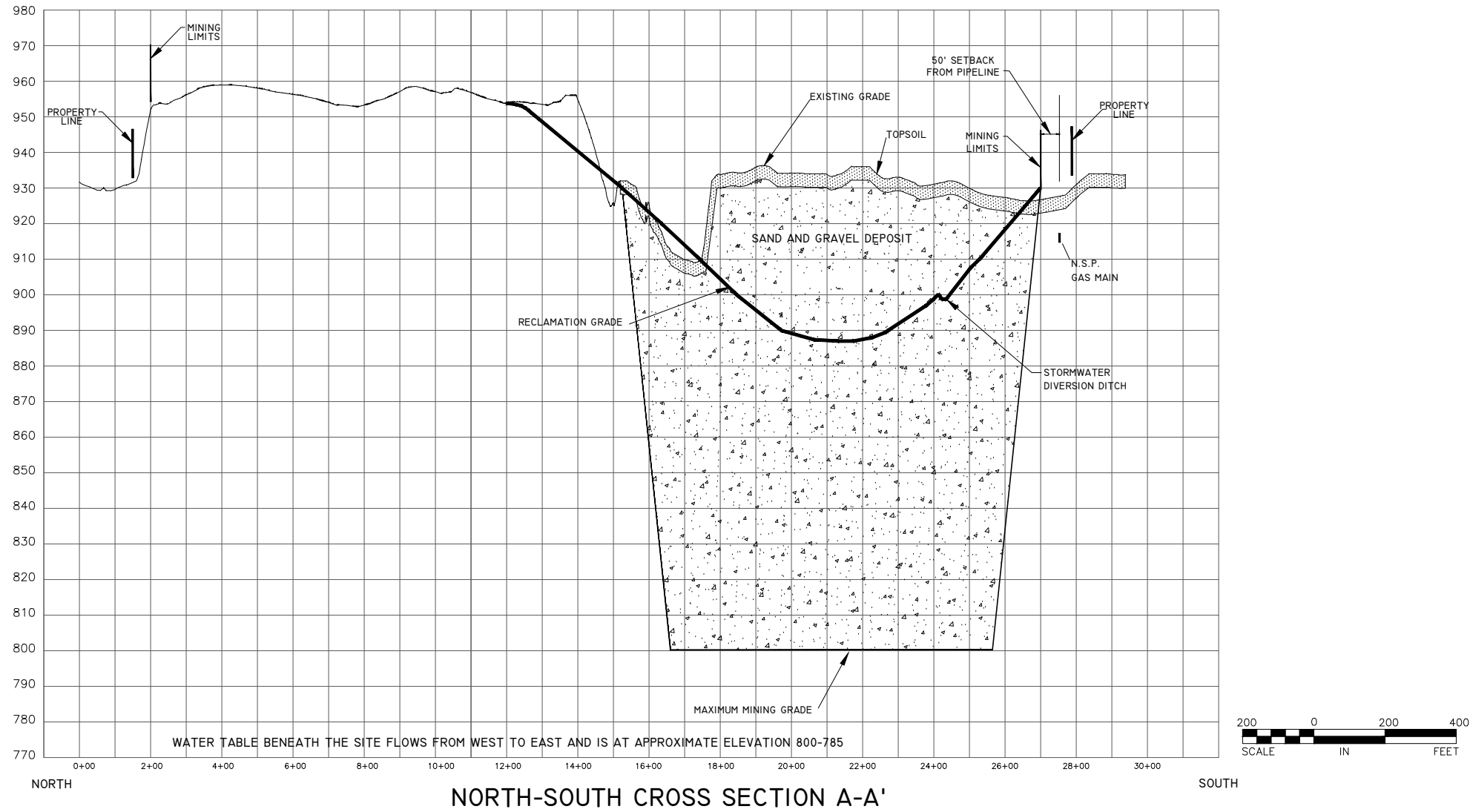
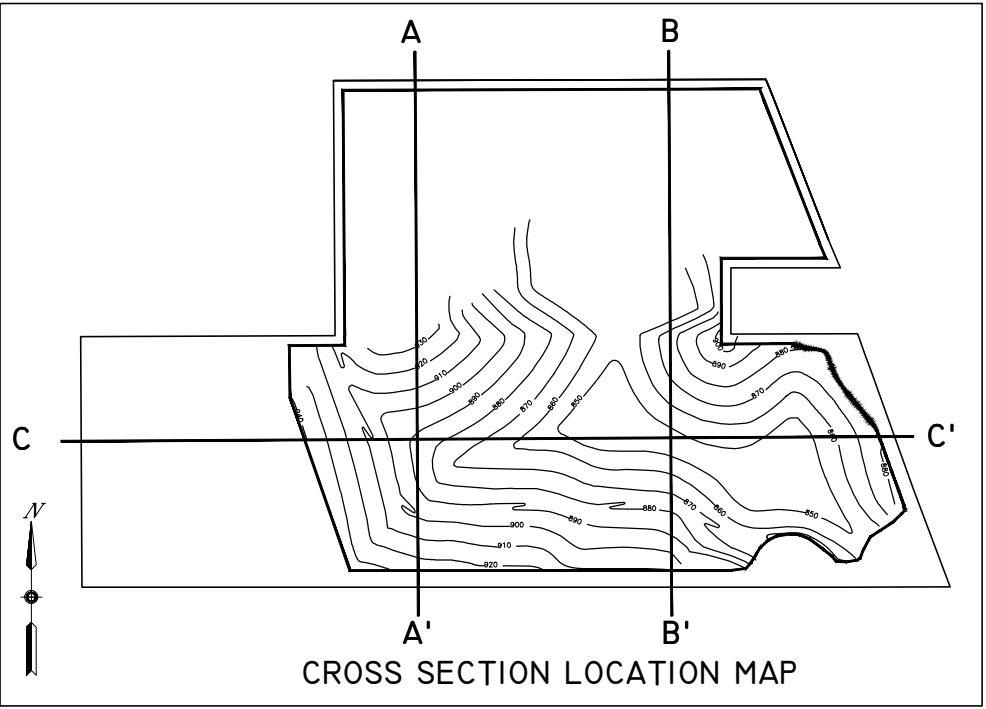
PROJECT NO.:	87-185
DRAWN BY:	mw
CHECKED BY:	kp
APPROVED BY:	kp
SCALE:	graphic
DATE:	08/05/2022

DESCRIPTION:

CROSS SECTION
A-A'

SHEET NO: _____

C-3





BITUMINOUS
ROADWAYS INC.
NVER GROVE HEIGHTS
GRAVEL PIT

2022 PERMIT
REISSUANCE[illegible]

I HEREBY CERTIFY THAT THIS PLAN,
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AND THAT I AM A DULY LICENSED
PROFESSIONAL ENGINEER UNDER THE LAWS
OF THE STATE OF MINNESOTA

Kirsten Pauly
DATE: 8/5/2022 REG. NO.: 21842

INFORMATION:

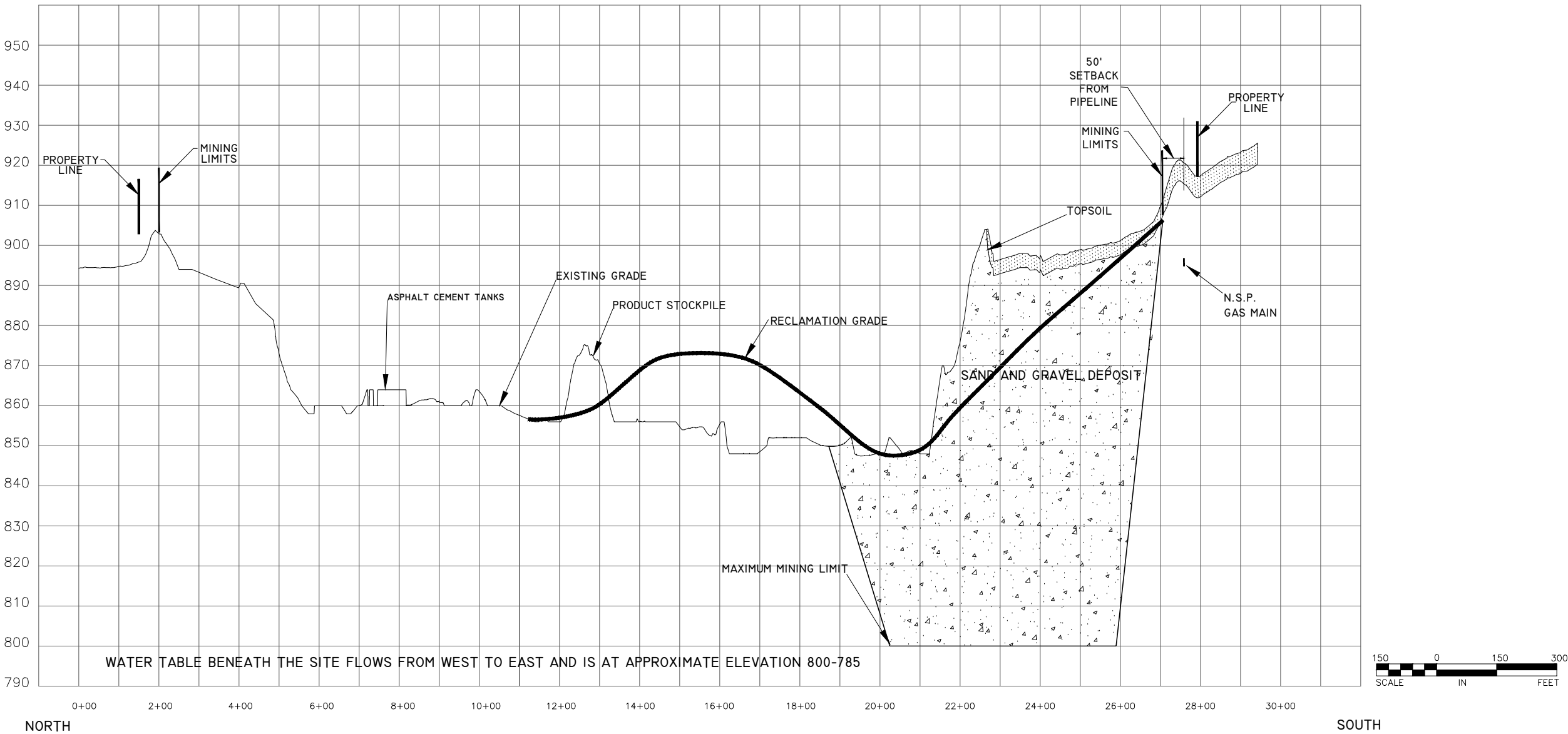
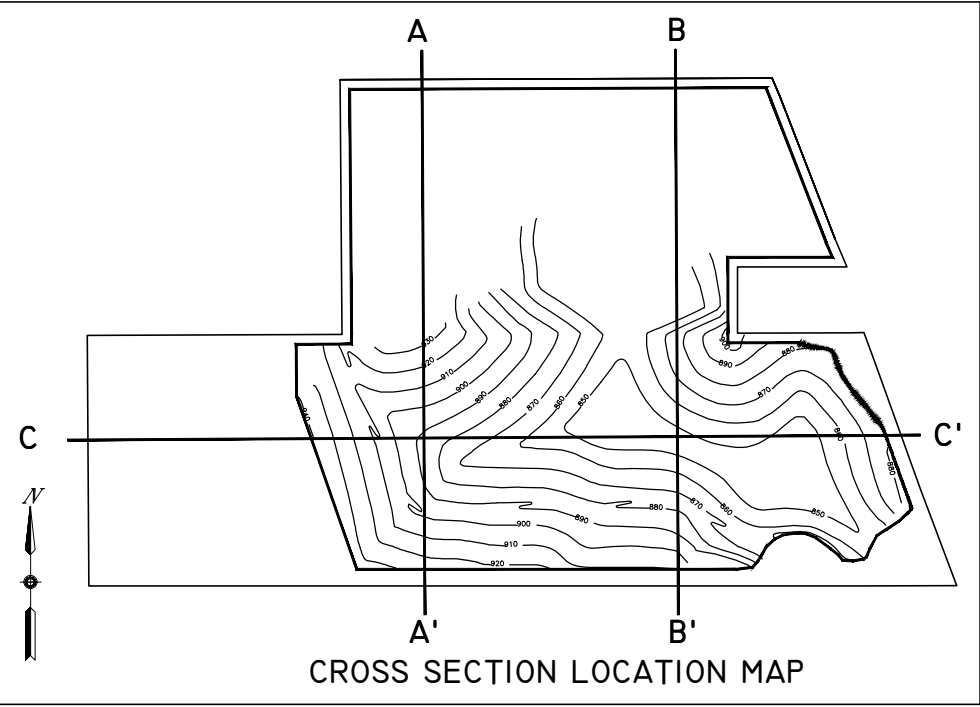
PROJECT NO.:	87-185
DRAWN BY:	mw
CHECKED BY:	kp
APPROVED BY:	kp
SCALE:	graphic
DATE:	08/05/2022

DESCRIPTION:

CROSS SECTION
B-B'

SHEET NO:

C-4





BITUMINOUS
ROADWAYS INC.
NVER GROVE HEIGHTS
GRAVEL PIT

2022 PERMIT
REISSUANCE[illegible]

I HEREBY CERTIFY THAT THIS PLAN,
SPECIFICATION, OR REPORT WAS PREPARED
BY ME OR UNDER MY DIRECT SUPERVISION
AND THAT I AM A DULY LICENSED
PROFESSIONAL ENGINEER UNDER THE LAWS
OF THE STATE OF MINNESOTA

Kirsten Pauly
Kirsten Pauly
DATE: 8/5/2022 REG. NO.: 2184

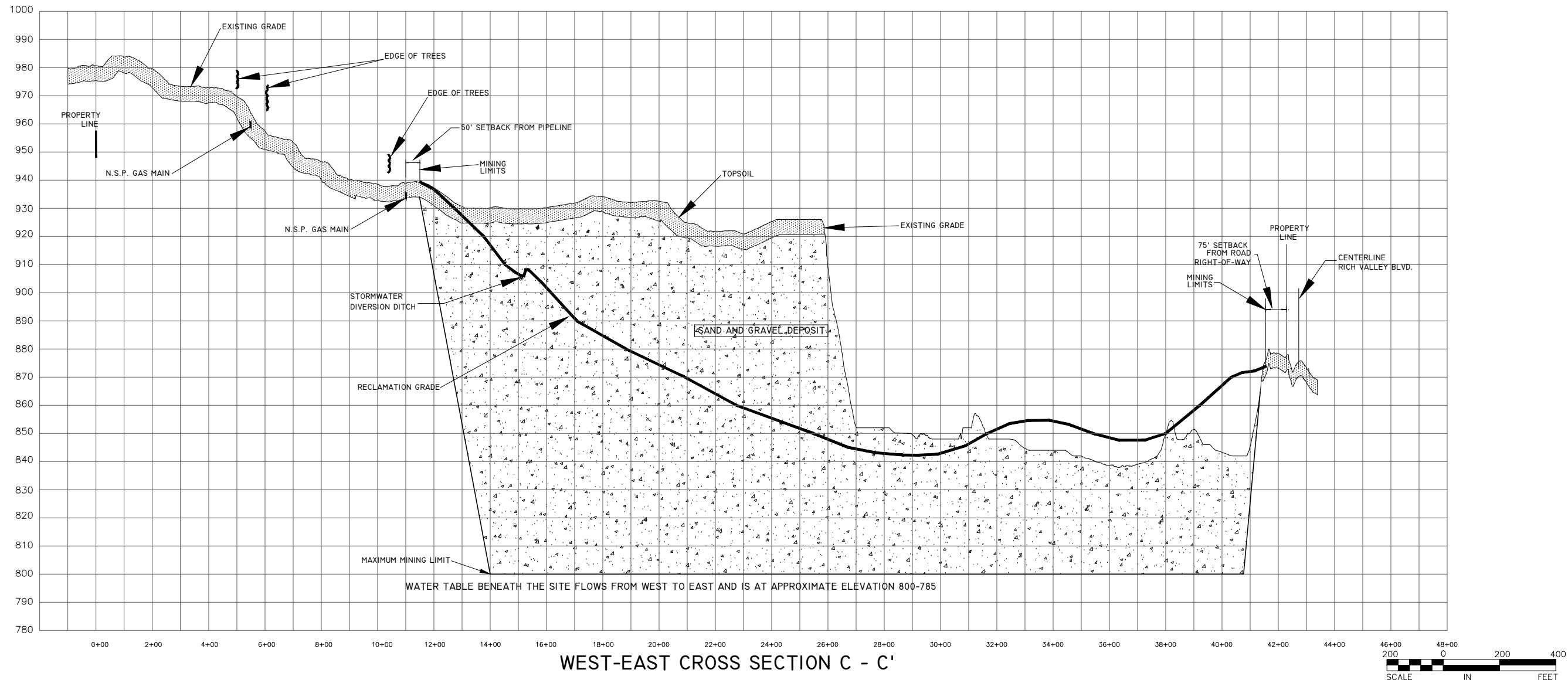
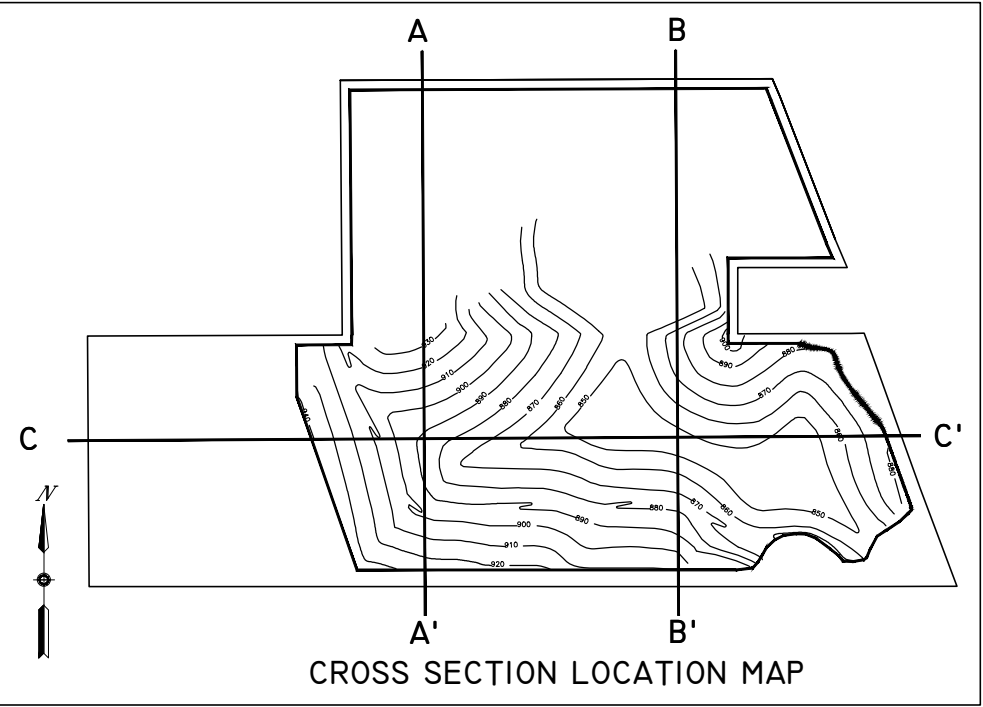
INFORMATION:	
PROJECT NO.:	87-185
DRAWN BY:	mw
CHECKED BY:	kp
APPROVED BY:	kp
SCALE:	graphic
DATE:	08/05/2022

DESCRIPTION:

CROSS SECTION
C-C'

SHEET NO:

C-5





BITUMINOUS
ROADWAYS INC.
NVER GROVE HEIGHTS
GRAVEL PIT

2022 PERMIT
REISSUANCE

DATE	REVISION
------	----------

NOTES:

1. Topography in the central portion of site from drone survey by USA Drone, dated 12/20/22.
2. Topography of the northern and southern portion of site from 2016 LIDAR data.
3. Boundary information from Sunde Land Surveying, LLC.
4. Reclamation
Grades: Reclamation grading will consist of backfilling and grading excavated areas with spoil materials unsuitable for sale or use in asphalt mix. Clean soil fill may also be brought to the site to be used for establishment of reclamation grades. All backfill used in reclamation activities is clean fill and natural earthen material free of debris or contamination.

Along the perimeter areas, backfilling will be required to achieve the final slopes that were previously approved by the City of Inver Grove Heights. The processing and stockpile area will remain open and active. Reclamation grades for the southern portion will be graded to a maximum slope of 10:1 as indicated on the Reclamation Plan.

Topsoil and Seeding: Topsoil capable of establishing and supporting vegetation, will be placed as areas are reclaimed. Topsoils will be replaced to a minimum depth of 6 inches. Reclaimed areas will be seeded and mulched to establish vegetation, stabilize slopes and minimize erosion.

Removal of Buildings: Within three months after completion of the sand and gravel mining operation any buildings or structures which have been established on the site as an accessory to the mining operation will be removed. Permanent structures which conform to the permanent zoning district requirements in which they are located, may remain on site.

Bond: A reclamation bond has been posted with the City of Inver Grove Heights to insure that the site is properly reclaimed upon completion of mining activity.

Final Use: Final use of the property upon reclamation will be consistent with the zoning and subdivision ordinances in effect at the time of final development. Community septic systems may be constructed in the future site development.

I HEREBY CERTIFY THAT THIS PLAN,
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BY ME OR UNDER MY DIRECT SUPERVISION
AND THAT I AM A DULY LICENSED
PROFESSIONAL ENGINEER UNDER THE LAWS
OF THE STATE OF MINNESOTA.

Kirsten Pauly
DATE: 8/5/2022 REG NO: 208

INFORMATION:

PROJECT NO.: 87-185

DRAWN BY: mw

CHECKED BY: kp

APPROVED BY: kp

SCALE: graphic

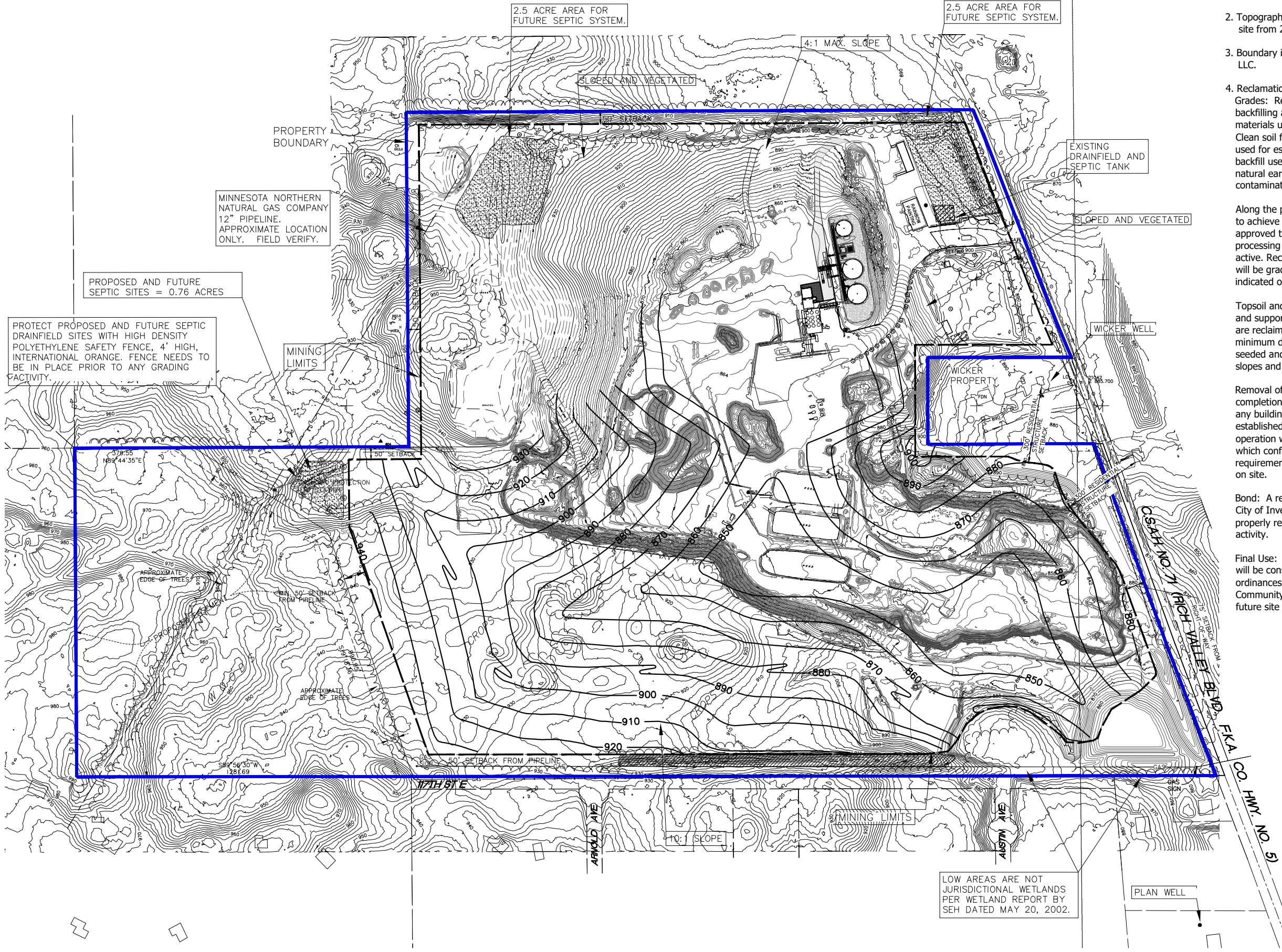
DATE: 08/05/2022

DESCRIPTION:

RECLAMATION PLAN

SHEET NO: _____

C-6



BOUNDARY INFORMATION FROM SUNDE
LAND SURVEYING, LLC.

MINNESOTA NORTHERN
NATURAL GAS COMPANY
12" PIPELINE.
APPROXIMATE LOCATION
ONLY. FIELD VERIFY.

PROPERTY
BOUNDARY

STORMWATER
PONDS. WATER
TEST ID "D"

SLOPED AND VEGETATED

EXISTING TOPSOIL
SCREENING BERM
(Approx. 40,000 CY)

METAL BUILDING
SALT STORAGE

RAINBOW WELL TEST ID "A"
(MN UNIQUE WELL NO.
608018)

EXISTING
DRAINFIELD AND
SEPTIC TANK

PRIMARY
SITE ACCESS

LOCATION WHERE MINOR
AMOUNT OF FOUNDRY SAND
USED AS FILL (HAS REMAINED
IN PLACE SINCE 1998)

ASPHALT TESTING
BUILDING

EXISTING DRAINFIELD
AND SEPTIC TANK

ASPHALT PLANT
OPERATIONS AREA

WICKER
PROPERTY

WICKER WELL TEST ID "B"
(MN UNIQUE WELL NO.
847817)

EXISTING TOPSOIL
SCREENING BERM

WASHPLANT
SUPPLY PONDS.
WATER TEST ID "E"

CURRENT CONVEYOR
PLACEMENT FOR
MINING SAND/ROCK

OLD FARMSTEAD WELL.
SEALED 2000 WELL
SEALING No 163359

SECONDARY
SITE ACCESS

OLD FARMSTEAD WELL.
SEALED IN NOV. 2022
WELL SEALING No. 347873

EXISTING TOPSOIL
SCREENING BERM

EARTHEN
SAFETY BERM

L. PLAN WELL
SEALED 2018

R. PLAN WELL
TEST ID "C"
(MN UNIQUE
WELL. NO.
207296)



BITUMINOUS
ROADWAYS INC.
INVER GROVE HEIGHTS
GRAVEL PIT

2022 PERMIT
REISSUANCE

DATE	REVISION
11/17/2022	Site Clarifications
3/9/2023	Add Unique Well Numbers/Sealing Records

I HEREBY CERTIFY THAT THIS PLAN,
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BY ME OR UNDER MY DIRECT SUPERVISION
AND THAT I AM A DULY LICENSED
PROFESSIONAL ENGINEER UNDER THE LAWS
OF THE STATE OF MINNESOTA.

Kirsten Pauly
DATE: 3/9/2023 REG. NO.: 2184

INFORMATION:

PROJECT NO.: 87-185

DRAWN BY: mw

CHECKED BY: kp

APPROVED BY: kp

SCALE: graphic

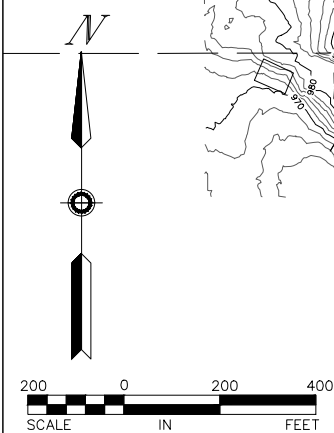
DATE: 08/05/2022

DESCRIPTION:

EXISTING CONDITIONS

SHEET NO:

C-1



CITY OF INVER GROVE HEIGHTS
DAKOTA COUNTY, MINNESOTA

ORDINANCE NO. 1343

AN ORDINANCE AMENDING TITLE 10, CHAPTER 4 OF THE INVER GROVE
HEIGHTS CITY CODE

CASE NO. 12-17CZA

The City Council of Inver Grove Heights ordains as follows:

SECTION I. Ordinance No. 1037 adopted July 8, 2002, entitled, "AN ORDINANCE AMENDING, RESTATING, AND RECODIFYING SECTIONS 405, 425, 515, 505, 516, 517, 518, 519, 520, 525, 535, 540, 545, 546, AND 550 OF THE INVER GROVE HEIGHTS CITY CODE" being also known as the City Zoning Ordinance is hereby amended to rezone to Temporary Sand and Gravel (S & G) for a period of five (5) years to following described property located within the City of Inver Grove Heights, Minnesota, to wit:

That part of the S $\frac{1}{2}$ of the NE $\frac{1}{4}$ of Section 32, Township 27, Range 22, lying westerly of Rich Valley Boulevard; except that part described as follows: Commencing at the SE corner of said S $\frac{1}{2}$ NE $\frac{1}{4}$; thence west along the south line thereof, a distance of 592.43 feet; thence north 344.9 feet; thence east 570 feet to the centerline of Rich Valley Boulevard; thence southeasterly along said centerline, a distance of 67 feet to the east line of said S $\frac{1}{2}$ NE $\frac{1}{4}$; thence south 281.85 feet to the point of beginning. Part of PID # 20-03200-011-05, and

The Northeast Quarter of the Southwest Quarter and the North One-Half of the Southeast Quarter, Section 32, Township 27, Range 22, and all of that tract of land lying West of Highway 5 in the Northwest Quarter of

the Southwest Quarter , Section 33, Township 27, Range 22; subject to an easement to Minnesota Northern Natural Gas Company, as described in Deed recorded in Book 193 of Deeds, page 374. PID No. 20-03200-010-75, 20-03200-020-50.

SECTION II. The Zoning Map of the City of Inver Grove Heights referred to and described in said Ordinance No. 1037 as that certain map entitled "Inver Grove Heights Zoning Map, June 24, 2002," shall not be republished to show the aforesaid rezoning, but the Clerk shall appropriately mark the said zoning map on file in the Clerk's Office for the purpose of indicating the rezoning hereinabove provided for in this ordinance and all of the notations, references and other information shown thereon are hereby incorporated by reference and made a part of this ordinance.

SECTION III. This Ordinance shall be in full force and effect from and after its publication according to law, and shall be subject to the following conditions:

1. The Temporary Sand and Gravel (S&G) Zoning shall remain in place on the property for a period of five (5) years to expire on (council approval date), 2022.
2. The operation of the sand and gravel operation approved herein shall comply with all provisions of Inver Grove Heights City Code, Title 10-13G, Sand and Gravel Overlay District, except as specifically modified herein.
3. The following plans, on file with the Planning Division, shall constitute the "approved plans" referenced therein:
 - Existing conditions dated 8/18/17
 - Phasing Plan dated 8/18/17
 - Final Land Use Plan dated 4/25/02
 - Cross Section Plans (3 sheets) dated 8/18/17
 - Reclamation Plan dated 8/18/17
 - Landscaping Plan - east property line dated 2017
 - Landscape Plan - south property line dated 2017
 - Water Testing Map - dated 9/5/17

All aspects of the operation of the site shall comply with the approved plans.

4. The location of the asphalt plant shall remain in its existing position and shall not be relocated unless this sand and gravel ordinance is amended.
5. "Operation" as it relates to hours of operation, shall include, but is not limited to, all mining and grading operations, washing, the operation of

the asphalt plant on the site, and movement of vehicles and equipment in and out of the site. Hours of operation on the site shall be limited to 7:00 a.m. to 7:00 p.m., Monday through Saturday, except hours of operation may begin at 6:00 a.m. Monday - Saturday for internal operations only, including start up of the asphalt plant and allowing BRI owned vehicles that were parked overnight to exit the site. The crushing of concrete which shall be regulated by Condition #7. The asphalt plant shall be allowed to operate a maximum of 30 night shifts (7:00 p.m. to 7:00 a.m.) during the construction season each year. Bituminous Roadways shall provide the city with written notice prior to each event, including confirmation of contact with the nearest neighbor so a record can be kept to monitor total hours used each season.

6. Crushing of concrete on site shall be permitted provided the following conditions are met:
 1. All crushing operations shall be conducted in the current location in the existing site.
 2. The stockpile of concrete to be crushed and the stockpile of already crushed concrete shall not in the aggregate exceed a total of 50,000 cubic yards.
 3. The height of the stockpiles shall not exceed 25 feet.
4. Crushing shall occur on not more than 12 weeks during the calendar year. No crushing shall occur on Sunday; crushing shall only occur between the hours of 7:00 a.m. and 7:00 p.m. Monday - Friday and 9:00 a.m. to 6:00 p.m., Saturday.
7. Bituminous Roadways may temporarily store Manufactured Organic Shingle Scrap (MOSS) in open storage areas provided the areas in the aggregate do not exceed one (1) acre in size and provided the location and storage configuration is approved by the Fire Marshal and Director of Community Development. MOSS storage areas may be relocated as operations on the site change subject to the approval of the Fire Marshal and the Director of Community Development. The City may impose reasonable conditions relating to dust control, fire prevention and size, height and configuration of the storage piles.
8. The final disposal of MOSS on the site shall be prohibited.
9. As part of the approval granted herein, the applicant may use used concrete and asphalt products as a part of the operation. Stockpiling area for these materials shall be as noted on the approved plans.

10. Bituminous Roadways shall prohibit all drivers of trucks from using Rich Valley Boulevard north of Cliff Road except in those instances where materials are being taken to a project located within the City's regulatory authority. Bituminous Roadways shall post an advisory to all drivers to the same effect at exits from the site.
11. The site shall be kept clear, at all times, of windblown debris.
12. The foundry sand in the southeast berm shall be left undisturbed.
13. Bituminous Roadways shall bring no additional foundry sand onto the site.
14. The berms which cover the foundry sand shall be maintained in vegetative cover to control erosion of the foundry sand.
15. The stockpiled MOSS, shingle scrap, recycled asphalt, and concrete pavement will not be disposed at the site.
16. Stock piles of recycled asphalt, MOSS, shingles, and concrete shall be limited in size to amount that will be used that year.
17. Backfill material shall be either clean fill material that was stripped off the site or other clean fill material which is brought in from offsite.
18. Spent bag house bags will be disposed of in a lined landfill permitted or approved to accept such materials.
19. A restoration bond shall be in an amount to cover the costs of restoration of the site, as determined by the City Engineer, prior to City Council approval.
20. Bituminous Roadways shall obtain and maintain the necessary licenses and approvals from Dakota County and Minnesota Department of Natural Resources. Terms and conditions of the license and approval shall be hereby incorporated into this City approval.
21. Bituminous Roadways shall obtain and maintain the necessary Minnesota Pollution Control Agency permits including two air quality permits and one industrial storm water permit. The terms and conditions of those permits shall be hereby incorporated into this City approval.
22. All reports which are required to be submitted to Dakota County under a Hazardous Waste Generators License and a Processing License shall also

be submitted to the City, including the required annual and quarterly reports.

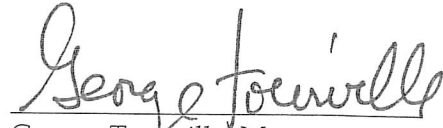
23. All reports which are required to be submitted to the Minnesota Pollution Control Agency shall also be submitted to the City, including annual emissions inventory report, semi-annual deviations report, annual compliance certification report, and annual report.
24. Monitoring shall be conducted at the single water well that consists of arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, DRO, GRO, phenol, pH, electric conductivity and alkalinity. The monitoring shall occur with half the wells every other year. Parameters and protocols shall be as agreed to by Dakota County, the City and Bituminous Roadways.
25. Monitoring of the storm water ponds and wells shall be conducted every other year and shall be tested for the same elements as listed in condition #24 per the proposed testing schedule identified on the Water Testing Map.
26. All buildings shall be removed from the site within three (3) months of the closure of the facility.
27. Bituminous Roadways shall enter into a Host Community Agreement with the City of Inver Grove Heights including the payment of host community fees, within three (3) months of the State Legislature providing the City with the Authority to enter into such an agreement.
28. Restoration shall be conducted in phases at the site. As portions of the mining area are completed, the areas will be backfilled, graded, topsoil applied and vegetation established.
29. The operator is responsible for obtaining all required permits for the wash water well from the appropriate state and or county agencies and must meet all DNR requirements, obligations and protocols for a well appropriations permit, including responsibilities and protocols for any remedial actions and those responsibilities and protocols for any compensation or damages from the loss of well use affected neighboring properties. Any change or any application for an appropriation permit for an aquifer different than the one that has been identified would require an amendment to the conditional use permit.
30. Bituminous Roadways shall provide a voluntary well interference protocol agreement for neighboring properties within ½ mile of the well

requesting to be a party thereto. The agreement shall be prepared by Bituminous Roadways and shall stipulate procedures to follow should well problems occur. The agreement between the parties is strictly voluntary and not required for the well to be operational.

31. The southern access to the site shall be allowed as a secondary driveway for the operation provided it is used by no more than 10% of the truck traffic for the site.

Enacted and ordained into an Ordinance this 9th day of October, 2017.

Ayes: 5
Nays: 0


George Tourville, Mayor

ATTEST:



Michelle Tesser, City Clerk