



**2022
ENGINEERING REPORT
for
AGGREGATE RESOURCES
WATERLOO TOWNSHIP, MICHIGAN**



April 18, 2022

Mr. Doug Lance
Waterloo Township Supervisor
Waterloo Township
9773 Mt. Hope Road
P.O. Box 130
Munith, Michigan 49259

**RE: Aggregate Resources, Inc.
2022 Annual Inspection & Permit Renewal Review**

Dear Doug:

Description & Background:

We have received and reviewed the Aggregate Resources, Inc. annual renewal application materials submitted to Waterloo Township. Fleis and VandenBrink was in receipt of the Aggregate Resources renewal application on March 21, 2022. For years Aggregate Resources has performed a sand and gravel extraction operation in the northeast quadrant of the Clear Lake Road and Harvey Road intersection. Per the Waterloo Township Sand & Gravel Ordinance, the applicant is required to renew their operating permit on an annual basis. The extraction site consists of nearly 70 acres of land owned by the Wahl family. The current extraction permit is set to expire on June 1, 2022.

Regulation:

Regulations for the sand and gravel extraction operations are outlined in the Waterloo Township Ordinance #02-05-21-2, Sand & Gravel Extraction Ordinance. It is required by the Township that an **annual renewal permit** (§4.04), **field inspection** (§4.05), **operational requirements** (§9.01 –§ 9.15), **landscaping specifications** (§13.01 – §13.04), **restoration plan details** (§14.01), **financial guarantee** (§8.01), and **indemnity insurance** (§8.03) along with any other permits from outside regulatory agencies (§7.01) are completed and provided to continue extraction measures.

The permit renewal process for the extraction operation begins when the operator submits the annual report to Waterloo Township. A formal site inspection is performed following submission of the annual report. An engineering report is then drafted following the site inspection. Comments and concerns from the Waterloo Township Screening Committee are considered after a meeting is held for review. The Screening Committee will make a formal recommendation to the Township Board to deny, approve or approve with conditions. Qualification for permit renewal will ultimately be decided by the Township Board. Should deficiencies be discovered in the permit application review process, the operator is required to correct them within 30 days of being notified. Granted the identified deficiencies are properly corrected within the given time constraint, the renewal permit shall be issued.

This Engineering report contains site information, a field inspection report, Township regulations and photographs of the operation. The conclusion of this report includes a formal recommendation to the Township.

**2960 Lucerne Drive SE
Grand Rapids, MI 49546
P: 616.977.1000
F: 616.977.1005
www.fveng.com**

Renewal Application Materials:

Fleis & VandenBrink received a copy of the following materials on March 21, 2022:

- 2021 Annual Report Plan – dated January 12, 2022

A renewal fee amount was requested by the applicant in the cover letter. It is suggested that the Township require \$4,000 to cover the costs of review considering a revised ordinance.

Section 4.04 of the revised Sand & Gravel Extraction Ordinance describes the information to be provided by the applicant for the annual renewal of the permit. These items include:

1. A report of the operations and the location thereof which were conducted at the site for the prior year,
2. A description of the expected mining operations and location thereof for the next year,
3. Projected restoration during the period of the new permit,
4. Current proof of financial guarantee and indemnity insurance,
5. Changes in or withdrawal of any required permit,
6. Any known or projected changes from previously submitted information,

Items 1 – 3 have been noted on the 2022 Annual Report Plan drawing provided. In the cover letter, the applicant has indicated that the insurance certificate and bond certificate are already on file with the Township and that they will be updated when the policies renew. Item 5 was not addressed. No changes are anticipated based on the information provided (referring to item 6).

Closure Plan:

Waterloo Township updated the Extraction Ordinance to include a Closure Plan. The requirements of a Closure Plan can be found in Section 6.05.W and include the following items:

1. What equipment will be removed and how,
2. How access roads will be restored,
3. What materials may remain on the property after the operation is completed,
4. Disposition of buildings, foundations, berms, fencing, scales, etc.

Aggregate Resources submitted a closure plan last year which was dated January 24, 2022. The closure plan outlines the following:

1. Perimeter berms and landscape remain in place.
2. Entry drive and gate will remain in place.
3. Drive to lower pit elevation to remain in place.
4. Electrical power service will remain in place per the Owner's request.
5. Scale and concrete foundation will be removed upon completion of processed material sales.

There are currently discussions between the Landlord and tenant in regard to the scale house and scales that are currently being used on site. In order to reduce reclamation costs, the tenant has proposed to leave the scales and the scale house on site for the property owner's future use.

Site Inspection:

The annual inspection took place on April 9, 2022. The inspection report can be found in Appendix A of this report. Nearly 65 photos were taken throughout the site inspection, many of these photos can be found in Appendix B of this report. The remaining photos have been filed with the Township Engineer. These photos can be easily accessed upon request.

All plant and process equipment has been removed from the site. No further extractions will be performed. All that remains on site is the single stockpile of MDOT 20 AA Material in the center of the pit. This pile will remain until the remaining product is sold.

The security fence appeared to be in fair condition with no area needing corrective action. Signs were frequently posted along the fence line in compliance with Waterloo Township requirements.

Several areas have been graded for final restoration and have been noted for re-seeding in Spring of 2022.

Inspection of the site proved that the sand and gravel extraction site was well-organized and clean which is consistent with past inspections.

Specific Operating Requirements (Section 9):

§9.01 Setbacks:

Excavation of and the stockpiling of extracted material shall not be conducted within the specified limits identified in the Sand and Gravel Ordinance. Additionally, the setback lines must be marked at frequent intervals. The applicant was compliant with this requirement in assuring that all setback markers were in place and easily identified by operators. Photos were taken of setback markers and they can be found in Appendix B of this report.

Stockpiles are required to be located a minimum of 200 feet from any property line. The applicant was compliant in this regard as there were no stockpiles observed within the required 200 feet from adjacent property lines.

§9.02 Building Line for Operation Structures:

To remain compliant with the Township ordinance, all permanent equipment and structures used for the extraction operation must be a minimum of 500 feet away from all property lines or public rights-of-way. By inspection, the applicant remains compliant in that regard.

§9.03 Access:

For several years, the access from Clear Lake Road to the site has remained the same. The access continues to be compliant with Township requirements having nearly a 250-foot paved section. Haul routes must be identified by the applicant and approved by the Township Board as stated in the Township Ordinance. The applicant should continue to be conscious about the local residences and remain compliant with Township requirements.

§9.04 Gates and Fences:

The site is surrounded with a security fence and a lockable gate. The perimeter security fence was in good condition at the time of inspection.

§9.05 Signs:

"Danger – No Trespassing" signs were located at frequent intervals along the secured wire fencing as required. The "Danger – No Trespassing" signs appeared to be in good condition and standing upright. The sign at the front gate was in the upright position and easy for the public to read.

§9.06 Noise, Vibration and Air Pollution:

There were no active operations taking place at the time of the inspection. In 2021, no violations have been reported by the Township in relation to noise, vibration and air pollution. With a pit floor elevation that is well below surrounding roadways the extraction operation has minimal environmental impacts. Inspections may be performed during the upcoming season to further monitor the operation.

§9.07 Pollution of Waters:

No complaints were recorded in 2021 pertaining to impacts on the adjacent Pond Lilly Lake. During the inspection, close attention was paid to the surface water for contamination. By inspection, no signs of contamination resulting from mining operations were discovered. The pit floor remains higher than Pond Lilly Lake elevation. The mining operations appear to be having no known impacts to Pond Lilly Lake.

§9.08 Natural Drainage:

No impacts to natural drainage of adjacent or surrounding properties were observed. As such, the applicant continues to be compliant in this regard.

§9.09 Access Roads:

Dust creation must be held to a minimum. The applicant continues to be diligent in this regard. The paved access path into the site serves as great dust control. In addition to the paved access, the applicant has a broom on site to further control dust creation.

§9.10 Slopes:

Restored slopes must not exceed a three (3) to one (1) slope (three foot horizontal one foot vertical). Close attention will be paid to the slopes that have not yet been finish graded and restored. The applicant is actively restoring slopes as noted in the 2021 Annual Report Plan. According to the proposed restoration schedule, the applicant plans to complete grading and seeding in Area 6B in the Spring of 2022. As restoration of this slope approaches, the three to one slope requirement will be inspected and enforced. Reseeding of Area 6A is expected this Spring (2022). After inspection, reseeded proved to be necessary. The applicant should also pay close attention to the erosion occurring in Area 6A and Area 7 as noted in the site inspection report.

Area 4 was restored in 2019. After inspection of this area, the restored slope appears to be stable with successful vegetation.

Overall, the proposed restoration plan is well-underway. Completion will be heavily dependent on market conditions as the applicant stockpiled processed material for 2022 sales. Based on the proposed restoration schedule, the applicant expects to complete with restoration efforts in the Spring of 2022. Sales of the stockpiled material will continue until all resources are depleted.

§9.11 Elevation of Plant Site:

The applicant appears to comply with elevation requirements for the site. As final restoration approaches, it is recommended that the applicant provides a benchmark for confirmation of final grades. At the time of inspection, there did not appear to be a benchmark set. If there happens to be a benchmark set at the site, it is recommended that the applicant clearly delineates the location and shields this control point from any vertical manipulation.

Per the Screening Committee conditions of approval, the applicant must not mine below an elevation of 992' which is approximately 10' above the average Pond Lilly Lake surface water elevation. The pit floor elevation could not be verified at the time of inspection, but the applicant has not indicated any intentions of mining below the pit floor. Visual observations supported this 10' vertical buffer.

§9.12 Stockpiles, Overburden and Equipment:

All stockpiles, overburden and equipment remained further than 200 feet from all property lines or public highway rights-of-way as required to comply with the ordinance. The stockpiles on the pit floor are plentiful as the applicant pushes on to complete extraction and processing operations this Spring. Photos of the observed stockpiles can be found in Appendix B.

The overburden stockpiles located on the south side of the pit floor continue to be depleted as the applicant continues to execute finish grading in the area that have been mined.

The applicant has located stockpiles of overburden and topsoil in the southern area of the pit floor to be utilized for covering the pit floor. Photos of this material can be found in Appendix B.

§9.13 Water and Sewage Disposal:

The applicant does not have water and sewer services available on the site. Portable toilets are utilized by the applicant for employee use. The portable toilet was on site during the inspection.

§9.14 Survey Markers:

Several survey markers were identified during the site inspection for right-of-way's, property lines and setback lines. During the inspection these markers were easily identified. The applicant has proven to be diligent in keeping survey markers in plain sight. Setback markers were easily identified along the northern

excavation as well as along the eastern restoration area. It is imperative that the applicant maintains all survey markers to ensure that operations remain within the specified extraction limits.

§9.15 Standards:

With exception of erosion along the north slope, the applicant continues to abide by regulations outlined by the Waterloo Township ordinance.

§15.03 Extraction Operation Closure:

Upon completion of extraction operations, the applicant is required to submit a written request to the Waterloo Township Clerk that the Waterloo Township Board acknowledge in writing that all conditions of the extraction permit have been met and that extraction operation may be closed, and the special approval use permit is terminated. With an anticipated completion of 2023 for restoration, the applicant should plan to provide or confirm a final closure plan as required by Waterloo Township. Further discussion is merited to confirm timing, landscaping requirements, inspection requirements, etc. regarding closure of the pit.

Landscaping (Section 13):

The applicant has not submitted a landscape plan with this application. As such, it could not be reviewed. With the completion of processing and extraction operations being in 2022 and restoration to follow, the final landscape plan must be submitted to allow adequate time for the Township to review.

The tree inventory was not recorded during the inspection, but all berms appeared to remain stable. The applicant should continue to be diligent in making timely repairs to restored slopes.

Restoration (Section 14):

Restoration methods remain consistent with past operations. The applicant remains efficient by reclaiming areas that have been previously excavated with material collected from current active areas. This tactic ensures that materials are not handled excessively. It is strongly encouraged that grading and restoration measures take place immediately following expiration of extractive activities in active mining areas. As final restoration of the site quickly approaches, it is paramount that the applicant begins to prepare for such activities. Planned re-seeding operations have been identified for Spring 2022 on the 2021 Annual Report.

According to the applicant's 2021 Annual Report Plan, extraction from all areas have ended. Reseeding of Area 6A is expected to commence in the Spring of 2022. Final grading is complete of Area 6B. This report is consistent with observations in the field. According to the restoration plan, Area 4 has been graded and seeded for final restoration. Observation in the site inspection revealed that the report of Area 4 was accurate. As mentioned previously, it is paramount that the applicant monitors this slope regularly to ensure that the slope remains stable and free of erosion.

The applicant has stockpiled material in the northeast corner of the pit floor in anticipation of selling the stockpiled marketable material and beginning finish grading the pit floor.

In 2021, the applicant sold 50,000 tons of MDOT 20AA.

Financial Guarantee and Indemnity Insurance (Section 8):

A financial guarantee is required for this extraction operation to assure that all disturbed areas will be properly restored. The original reclamation surety bond was issued May 21, 2013 for an amount of \$120,670.00 with Waterloo Township named as the Obligee. The approval of Waterloo Township is required for any changes or adjustments to this bond.

In the event that Aggregate Resources does not follow through with reclamation of the site the surety bond allows for Waterloo Township to contract for unfinished work. This gives the Township the funds needed to hire a contractor to complete the reclamation work to make the mining site compliant. The bond amount is figured solely from what the work would cost the Township to contract for.

The work that was completed in 2021 leaves approximately 7.1 acres of restoration to be done, with 3.5 acres to be reseeded. It is recommended that the surety bond amount remains at \$85,800 for 2022. This amount will be sufficient for the current calendar year assuming the Township's costs of all restoration activities. As more restoration is completed, the reclamation surety bond can decrease. Please refer to Appendix C for calculations supporting this bond amount.

Section 8.03 of the Waterloo Township Ordinance orders: "The applicant shall provide a liability insurance policy underwritten by a provider licensed in the State of Michigan to cover property damage for surface and/or subsurface occurrences and bodily injury in an amount not less than \$4,000,000.00 per occurrence, in any combination of primary and umbrella coverage, policies in the past have given \$5,000,000.00 of coverage per occurrence. If the operator named to the policy fails to maintain the insurance, all operations will be brought to a halt. Confirmation of the current policy will need to be reported to the Screening Committee by the applicant providing an updated and current Certificate of Liability Insurance.

Summary:

For years, the applicant has respected and abided by Waterloo Township requirements outlined in the Sand and Gravel Extraction Ordinance. The 2021 season was consistent with past seasons in that the applicant remains compliant and respectful of requirements. It is strongly recommended that the Screening Committee thoroughly reviews the provided application materials for the 2022 permit renewal. For the upcoming season, the applicant is obligated to address the following items:

1. The applicant should closely monitor restored slopes and make timely repairs to maximize slope stability. Area 6A and 7 shows signs of erosion. The restoration plan calls for reseeded in Area 6A. The applicant must address the erosion discovered in this area prior to seeding. Please refer to Appendix B for photos in the subject area.
2. As final restoration approaches, it strongly recommended that the applicant provides a benchmark with an elevation for confirmation of final site grades. This benchmark should be clearly delineated and protected from manipulation. In the 2019 permit issuance, the applicant was required to install a benchmark in the pit floor for reference in the final reclamation process.
3. Hours of operation should continue to be as follows:

<u>Operations:</u>	<u>Transport & Load:</u>	<u>Repair:</u>
7:00 am – 7:00 p.m. M-F	7:00 am – 6:00 p.m. M-F	6:00 am – 9:00 p.m. M-F
7:00 am – 1:00 p.m. Sat.	7:00 am – 1:00 p.m. Sat.	6:30 am – 5:00 p.m. Sat.
4. Trucking companies are required to use hauling routes previously approved by Waterloo Township.
5. The applicant should continue to monitor haul routes for dust creation. It is imperative that the applicant continues to minimize dust creation and minimize impacts to the public.
6. A bond amount of \$85,800.00 is recommended based on computations found in Appendix C.
7. The estimated final restoration schedule has been impacted by production in 2019 and 2020. Should the applicant anticipate market conditions to impact restoration in 2022, the Township must be notified.
8. It is recommended that this applicant provide an updated topographical survey of the site as final restoration approaches.
9. A Closure Plan shall be submitted as required in the revised ordinance – Section 605.W. Once the Township, the property Owner and the applicant are all in agreement, the Closure Plan should be finalized.

Conclusions:

The applicant continues to be compliant with Waterloo Township requirements and responsive to any issues that are discovered in the permit renewal process. Overall, the safety of the public and minimization of negative impacts has been at the forefront of the subject extraction site operation. It is our recommendation that the applicant is granted permit renewal for future sand and gravel extraction operations. Please note that this recommendation is merely contingent upon the level of satisfaction the application brings the Waterloo Township Screening Committee.

Should the permit be renewed by the Township, regular inspection will be performed through the 2022 mining season to monitor restoration developments, unless complaints warrant further investigation. As final restoration approaches, additional inspections may be required by the Township to ensure that the operation is successfully retired.

We fully intend to attend the Extraction Committee meeting scheduled for Thursday, April 21, 2022 to present this report. Should questions arise before then, please contact us at your earliest convenience.

Sincerely,

FLEIS & VANDENBRINK


Bruce Pindzia, P.E.
Township Engineer


Shane Peterson, P.E.
Township Engineer Assistant

cc: Don Beagle, DB Consulting Group, LLC., 1089 Chestnut Lane, South Lyon, MI
Janice Kitley, Waterloo Township, Township Clerk
Waterloo Twp. Extraction Committee

Appendix A

Site Inspection Report

AGGREGATE RESOURCES, INC.
FIELD INSPECTION REPORT

Location: Wahl Pit – Northeast corner of intersection of Clear Lake Road and Harvey Road, Waterloo Township, Jackson County, Michigan

Date: Saturday, April 9, 2022

Weather: Overcast, 38°F, Winds westerly 8 mph

Site Inspector: Bruce Pindzia, P.E.

I arrived on site at 3:30 pm and unlocked the front gate. No on-site activities were observed. The processing plant had been removed from site. All conveyors were removed as well. A single stockpile of marketable material was observed in the northeast quadrant of the site. Several stockpiles of overburden and topsoil were observed in the southern and southeast portions of the site. No restoration activities were occurring. No trucking of saleable materials were noted.

The site inspection took place in a clockwise direction starting at the north central portion of the site. A total of 65 photographs were taken of the site. Many of these can be viewed in Appendix B of the main report. All photographs have been stored with the Township Engineer. The following observations resulted from this site inspection:

Observations:

The scale house was in its usual location and appeared ready to weigh outbound haulers. The asphalt driveway and gravel haul road were in good condition.

Soil erosion was observed but was limited to the areas disturbed last season. These areas were situated on the north slope near the northeast corner of the site. This area was not final graded and consisted of bare soils.



Figure 1: Erosion on north central slopes.

The perimeter security fencing was noted in good condition with “No Trespassing” signed posted at regular intervals. A single large stockpile noted by the applicant to contain approximately 50,000 tons of MDOT graded 20AA material, was situated in the north central pit floor.



Figure 2: 21AA stockpile on pit floor

Several setback markers (white pipes) were observed at the top of the excavation areas. No encroachments into the setbacks were observed at the time of inspection. The area previously planted in 2017 with 500 seedling trees did not appear to be supporting any tree growth at the time of this inspection.

The paved entrance from Clear Lake Road was in good condition with no changes from last year. The gravel haul road leading down into the pit was in excellent condition and ready to take on another season of traffic.



Figure 3: Paved Entrance



Figure 4: Gravel Haul Road leading into pit

In general, the site was in good condition and well organized. Truck traffic was set up to be safe with easy access to the stockpile. No areas of significant concern were observed although some grading and restoration work remains to be completed. This work is expected to take two seasons to complete.

Appendix B
Site Inspection Photo's



Figure 1: Northwestern slope



Figure 2: Restored pit floor



Figure 3: Restored pit floor.



Figure 4: Haul Road looking west.



Figure 5: 20AA stockpile and erosion on north slope.



Figure 6: 20AA stockpile and shallow standing water.



Figure 7: Erosion on north slope.



Figure 8: Erosion on north slope.



Figure 9: Erosion on north slope.



Figure 10: 20AA stockpile.



Figure 11: Overburdened stockpile for restoration and grading.



Figure 12: Restored slide slope on east side.

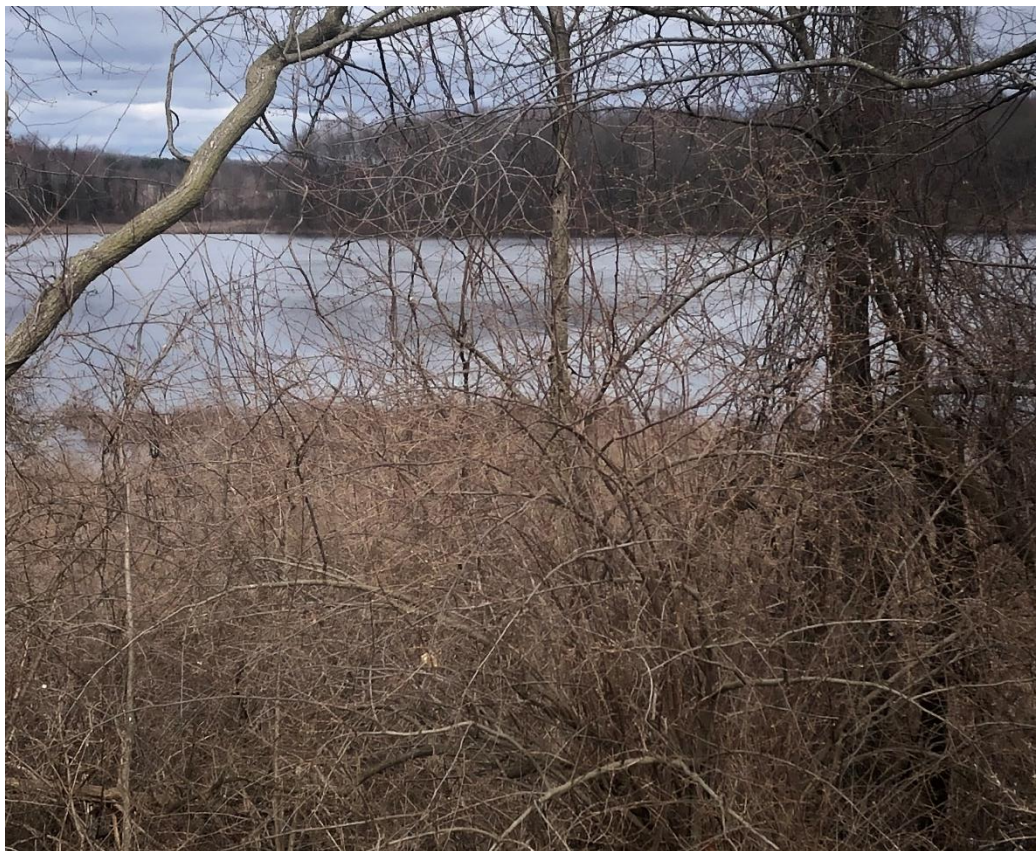


Figure 13: Pond Lilly Lake.



Figure 14: Stockpile and northwest slope.



Figure 15: Stockpiled vegetation for burning.



Figure 16: Haul road and scale house.



Figure 17: Paved entrance.



Figure 18: Paved entrance and Clear Lake Road.

Appendix C

Performance Guarantee (i.e. Surety Bond)

2022 Summary

For 2022, approximately 16 acres remains to be restored. This quantity includes Areas 5, 6, and 9. The applicant has estimated a completion of restoration for Areas 5, 6 and 9 to be in 2021. This is highly dependent on market conditions. The applicant will restore the remaining areas once the aggregate is completely processed. Area 4 was restored in the 2019 season.

Cost Estimate

Item	Quantity	Cost	Total
Slope Restoration (i.e. grading)	5 Acres	\$5,000	\$25,000
Establish Vegetation (i.e. topsoil, seed & mulch)	16 Acres	\$2,250	\$36,000
Remove Scales	LS	\$4,000	\$4,000
Landscape Road Frontages	LS	\$13,000	\$13,000
Subtotal			\$78,000
10% Township Administration Fee			\$ 7,800
Total			\$85,800

A reclamation surety bond of \$85,800 will be necessary for the remaining 16 acres. This is the bond amount that I am officially recommending for 2022. No decrease to the existing surety bond is recommended at the current time.

Appendix D
Board Meeting Minutes
May 25, 2021

Waterloo Township Board Meeting Approved Minutes

25 May 2021 7:00 P.M.

9773 Mt. Hope Road

Munith, MI 49259

Call to Order and Pledge: 7:00 p.m.

Present: Lance, Morency, Walz, McAlister, Kitley, and 11 residents. Also attending: Jackson County Sheriff Gary Schutte and Deputy Jim Moore.

Public Comment: Richardson talked about the bills that are being voted on in Senate and House regarding our governance of gravel pits and short-term rentals. He has encouraged people to contact their representatives to address these bills # **SB 429 Gravel Bill** and **SB 446 Short-Term Rentals**. As a township, we do not want to lose our rights to govern these processes. Jackson County Sheriff Gary Schutte introduced himself and Deputy Jim Moore who is now serving our township 40 hours per week. He feels that Deputy Moore will be an asset to our township and will present monthly reports. Previous deputy has retired. Jason, Vice President of the Centurions Motorcycle Club in Munith introduced himself. They would like to help the Munith community with whatever is needed or as a charity fund raiser. They left information for the Township. They would like to be more involved in the community.

Consent Agenda: Kitley motioned with support from McAlister to accept the consent agenda as presented. Aye/all; no/none. Motion carried. Kitley motioned with support from Walz to pay the bills as listed on the Post Audit report in the amount of \$632.22. Roll call vote: Yes/ Kitley, Lance, Morency, McAlister, Walz ; No/none. Motion carried. There was a police report for April given by Deputy Moore. He said there would be a more complete report for May.

Correspondence: None

Special Order: Aggregate Resources Permit Renewal: Don Beagle gave the report that mining is done in the Aggregate Resources Pits. 45,000 tons of gravel went out last year. There is still a large amount of material left to move out, but they are working at getting it off site. Hoping to have all materials moved by end of 2021 and have everything finished by 2022.

Lance motioned with support from McAlister to approve the renewal permit for 1 year with the following conditions:

1. The new permit expires on June 1st, 2022.
2. Aggregate Resources retains the existing surety bond language, and dollar amount of \$85,800 (this includes the 10% Township administrative fee).
3. Regrading and brush removal shall be performed in area 5 before a potential September meeting of the Extraction Committee.
4. No mining shall occur below 990' in the pit floor.
5. Aggregate Resources will maintain eroded slopes as necessary as we approach final reclamation.
6. Aggregate Resources agrees to a fall meeting of the Extraction Committee if deemed appropriate by Waterloo Township for the following purposes:
 - a. Review progress towards the reclamation plan
 - b. Review a complete and updated 'closure plan'
 - c. Discuss any adjustments that can be made to the reclamation bond amount.

Aye/all; no/none. Motion carried.

New Business: Walz stated that the Parks and Recreation Committee was having a work day at the Park in Munith to paint and plant flowers on Wednesday, May 26 at 9:00 a.m. They are looking for help in maintaining and watching the park in Munith.

Waiting on information from M-Dot to work on road millage. Will have to have some informational town halls in preparation.

New Business: Morency reported on the Planning Commission meeting held on May 18th. They are working on the short-term rental ordinance, putting together the verbiage. They have no additions to the updated ordinance list.

There was discussion about opening up the Town Hall for rentals again now that restrictions are being lifted. Kitley stated that there have been several calls from people looking to rent. It was decided to go ahead with the rentals.