

Appendix A

Agency Coordination



United States
Department of
Agriculture

March 01, 2023

Marketing and
Regulatory
Programs

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Gaylord, MI 49735

Mead & Hunt, Inc.
William Ballard, AICP
2605 Port Lansing Rd.
Lansing, MI 48906

Re Early Coordination Review of Proposed Improvements Cherry Capitol
Airport, Traverse City, Michigan

Dear Mr. Ballard,

Thank you for the opportunity to review your proposed improvements at Cherry Capitol Airport, Traverse City, Michigan. This letter is in response to your request dated 02/13/23 for comments on the proposed installation of Instrument Landing System (ILS) which consist of a localizer, localizer shelter and an ILS antenna. The ILS Antenna will be installed at the southwest intersection of taxiway C and taxiway D north of runway 10/28 and the localizer shelter will be installed adjacent to the existing medium-intensity approach lighting system (MALSR) shelter, off the end of runway 28. Our concern in reviewing such proposals is for the safety of air travel and how wildlife may potentially affect aviation safety. Our mission is to not only protect aviation safety, but also to protect the wildlife in the immediate vicinity of the airport.

In reviewing this proposal, our focus is on how these structures may affect wildlife usage of this area. These species include but are not limited to perching avian species such as raptors, owls, and doves. Wildlife Services (WS) personnel have conducted multiple onsite wildlife observations/control activities over the years on this airfield and do not think that these additions would greatly increase wildlife usage on the airfield.

Our recommendations with this proposal are as follows:

1. Cherry Capitol wildlife staff conduct routine wildlife monitoring of the proposed area to evaluate wildlife usage before and after the project is completed. If an increase in wildlife usage is noted, recommended mitigation techniques would include but should not be limited to non-lethal harassment and/or lethal removal.
2. When choosing a grass variety to plant upon project completion, choose a single variety, stay away from blends. It is recommended to use a high

endophyte tall fescue type of grass that will deter wildlife from grazing in this area.

3. Wildlife Services can perform a site visit to further discuss habitat management techniques to discourage wildlife usage of the proposed area as well as appropriate non-lethal and lethal control strategies in the event wildlife are observed using the area.

4. Wildlife Services would also be able to conduct a site visit over the course of several days to better evaluate wildlife hazards and their effect on aviation safety. Ideally, visits could be scheduled once the structures are put in place to better gauge potential usage and help steer mitigation strategies.

Thank you again for the opportunity to assist with this project. Feel free to contact me if you have any questions.

Sincerely,

Tony Aderman
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Are Turf-type Tall Fescue Cultivars Useful for Reducing Wildlife Hazards in Airport Environments?

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ABSTRACT: Wildlife-aircraft collisions pose a serious risk to aircraft and cost civil aviation over US\$1 billion worldwide annually. Habitat management within airport environments is the most important long-term component of an integrated approach to reduce the use of airfields by hazardous wildlife. Recent research has demonstrated that Canada geese avoid foraging on endophyte-infected tall fescue; consequently, this turfgrass might be useful in airfield revegetation and seeding projects. Although some research evaluating commercially available tall fescue cultivars on airfields has been conducted, additional information is needed to determine if tall fescue cultivars might be viable for airfields in various regions of the U.S. In 2007, a study was initiated to examine the establishment of currently available high-endophyte 'turf-type' tall fescue grasses at 9 airfields. The objectives were to: 1) determine if selected tall fescue cultivars establish on airfields across the U.S. and 2) provide airport-specific recommendations for tall fescue cultivar selection. At each airfield, 12 tall fescue cultivars were seeded into 3 replicate experimental plots in either fall of 2007 or spring of 2008. Although tall fescue cover varied among airports, most cultivars resulted in similar amounts of tall fescue cover after one or two growing seasons. This study demonstrates and identifies tall fescue cultivars that will grow successfully in the environmental conditions found on these airfields while providing airfield vegetation that is minimally attractive to wildlife hazardous to aviation.

KEY WORDS: airports, bird control, birds, birdstrike hazard, grass, habitat management, tall fescue, *Schedonorus phoenix*

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INTRODUCTION

Wildlife-aircraft collisions cause serious safety hazards to aircraft and their occupants. Wildlife strikes cost civil aviation approximately \$682 million annually in the United States (Dolbeer et al. 2011). Gulls (*Larus* spp.), waterfowl such as Canada geese (*Branta canadensis*), raptors (hawks and owls), and blackbirds (Icterinae)/starlings (*Sturnus vulgaris*) are the species presently of most concern at airports (Dolbeer et al. 2000, Dolbeer et al. 2011). Most strikes occur under 500 feet altitude (above ground level) in the vicinity of the airport (Dolbeer 2006, Dolbeer et al. 2011). Wildlife management techniques that reduce the number of birds in and around airports are therefore critical for safe airport operations.

Habitat management is a long-term component of an integrated approach for reducing wildlife use of airports. Species composition of plant communities (the types of plants) on airfield areas might also impact the degree of attractiveness of airfields to hazardous birds and other bird attractants (e.g., insects, small mammals) (Dekker and van der Zee 1996, Washburn and Seamans 2004, Washburn et al. 2007a). Ideally, airfield vegetation should possess a variety of desirable qualities. Vegetation used on airfields should be aesthetically pleasing to the public, relatively inflammable, tolerant to vehicle traffic, drought tolerant, and require minimal care and maintenance. In addition, favorable airfield vegetation should provide limited food resources (e.g., seeds, insects) for hazardous birds, provide little cover for small mammals (an attractant to raptors and owls), and resist invasion by other plants that provide food and cover for wildlife (Linnell et al. 2009, Washburn et al. 2011).

Tall fescue (*Schedonorus phoenix* (Scop.) Holub) is a cool-season perennial sod-forming grass that grows well in the U.S. in areas of temperate climate. In recent years, this turfgrass has become very popular and is used widely by the green industry in parks, lawns, golf courses, sports

fields, and other areas (Casler 2006). Tall fescue is frequently infested with the fungal endophyte *Neotyphodium coenophialum* that forms a mutualistic symbiotic relationship with the grass. Grasses containing endophytic fungi derive several benefits, such as resistance to both grazing and insect herbivory, increased heat and drought stress tolerance, and increased vigor (Ju et al. 2006). Tall fescue is extremely competitive and develops into solid stands, crowding out other grasses, legumes, and annual weeds (Barnes et al. 1995, Washburn et al. 2000) and consequently tall fescue grasslands might be unattractive to wildlife (Mead and Carter 1973, Barnes et al. 1995, Washburn et al. 2007a).

Alkaloids (i.e., plant defense chemicals) produced by the endophyte-infected tall fescue have been shown to cause weight loss, reproductive problems, and a variety of diseases in livestock and laboratory small mammals (Schmidt and Osborn 1993, Bacon and Hill 1997). Further, research studies suggest wild mammals and birds might be negatively affected by consumption of endophyte-infected tall fescue (Madej and Clay 1991, Conover and Messmer 1996, Washburn 2000). Recent research has shown that grazing Canada geese do not consume endophyte-infected tall fescue (Washburn et al. 2007a, Washburn and Seamans 2012). These findings suggest endophyte-infected tall fescues might be favorable turfgrass cultivars to use in reseeding and vegetation renovation projects on airfields and other areas where Canada geese are unwanted.

Recently, a large number of 'turf-type' tall fescue cultivars have been developed for the turfgrass industry. Turf-type tall fescues are bred to maintain deep green color, drought and disease resistance, and grow to shorter heights at maturity than traditional tall fescues. In addition, many of these new cultivars have high levels of endophyte infection (Mohr et al. 2002). Over 200 varieties of turf-type tall fescue are currently available from the turfgrass industry

Table 1. Nine civil airports and military airfields in the northeastern, southeastern, and central United States where 12 commercially available tall fescue cultivars were seeded and evaluated during 2008-2010.

Airfield	State	Seeding Season	Seeding Date	Mulch applied?
Westover Air Reserve Base	MA	Fall	2 Oct 2007	Yes ^a
Washington Dulles International	VA	Fall	30 Oct 2007	Yes ^a
Capital City Regional	IL	Fall	17 Sept 2007	No
Williamson County Regional	IL	Fall	4 Oct 2007	No
Birmingham-Shuttlesworth International	AL	Spring	9 April 2008	Yes ^b
Cleveland-Hopkins International	OH	Spring	23 April 2008	Yes ^c
Gerald R. Ford International	MI	Spring	29 April 2008	No
Minneapolis-St. Paul International	MN	Spring	30 May 2008	No
St. Paul Downtown	MN	Spring	22 May 2008	No

^aMulch applied to study plots consisted of hay straw.

^bMulch applied to study plots consisted of pine straw.

^cMulch applied to study plots consisted of commercial hydromulch.

Table 2. Average tall fescue cover (%) and vegetation height (cm) during the first and second growing seasons following seeding of tall fescue cultivars at 9 airports during 2008-2010.

Airport	Tall fescue			
	First growing season		Second growing season	
	Cover (%)	Height (cm)	Cover (%)	Height (cm)
Fall Seeded				
Westover ARB	41	22.4	32	1.2
Washington Dulles IA	23	15.7	49	14.5
Capital City RA	65	17.9	71	22.2
Williamson County RA	3	3.6	---	---
Spring Seeded				
Minneapolis-St. Paul IA	9	30.2	45	10.8
St. Paul Downtown RA	2	53.5	19	30.2
Cleveland-Hopkins IA	29	8.1	52	---
Birmingham-Shutt. IA	1	13.6	---	---
Gerald R. Ford IA	50	7.6	35	17.3

^a Essentially no tall fescue plants were found in the study plots during the second growing season.

^b Airfield maintenance mowed the test plots to approximately 13 cm in height one week before the vegetation measurements were taken.

that could be used in airfield revegetation projects.

Previous research demonstrated that tall fescue cultivars will establish in airport environments, but more information is needed (Washburn et al. 2007b). Soil, climate, and biological (e.g., weed competition) conditions on airfields are typically very harsh for establishing and growing desirable vegetation. An additional series of experiments was conducted at numerous airports across the U.S. to evaluate the establishment of several new cultivars of tall fescue grass, each containing high levels of endophytic fungus. The objectives of the study were to: 1) determine if selected turf-type tall fescue cultivars will establish on various airfields across the U.S. and 2) provide airport-specific recommendations for tall fescue variety selection.

METHODS

This study was conducted at 9 civilian or military airfields in the northeastern, southeastern, and central United States (Table 1). At each airport, 12 tall fescue cultivars were seeded into 3 replicate experimental plots.

On each facility, 1,400 m² (15,000 ft²) section of the airfield was prepared for seeding. All 12 tall fescue cultivars were seeded into 3 separate replicated plots (approximately 467 m² each) at each airport. Cultivars were selected based on information gained from seed companies and agronomists. All tall fescue cultivars were high-endophyte turf-type tall fescues, except for the 'Kentucky-31' cultivar (also high-endophyte) which is the original agronomic tall fescue variety found in the U.S. (Mohr et al. 2002). Eleven turf-type tall fescue cultivars were evaluated in this study, including 7 that were evaluated in previous experiments ('2nd Millennium', 'Crossfire II', 'Finesse II', 'Grande II', 'Mustang III', 'SR8600', and 'Titan LTD') and 4 new cultivars ('Inferno', 'Chocise III', 'Justice', and 'Rhambler'). We seeded the experimental plots by hand for increased control of seed application rate; all cultivars were seeded at a rate of 8 lbs./1000 ft². Following seeding, test plots were raked, "packed", and fertilizer was applied. Mulch was applied to treatment plots at some airfields at the time of seeding if the location of the plots relative to active aircraft movement areas allowed (Table 1).

Establishment and growth of seeded tall fescue cultivars was quantified by randomly establishing and sampling 5 0.25-m² herbaceous sampling plots in each treatment plot during the first and/or second growing season following seeding. Tall fescue cover

(%), other grass (i.e., non-fescue) cover (%), forb and legume cover (%), bare ground (%), and height of living vegetation (cm) was visually estimated in each 0.25-m² sampling plot (Bonham 1989). Fescue cultivars seeded at 4 airfields in fall of 2007 were evaluated in fall 2008 and spring 2009 or fall 2009. The 5 airfields seeded in spring 2008 were evaluated in fall 2008 and fall 2009.

Airports seeded in the fall and the spring were analysed independently. Analysis of variance (ANOVA) techniques were used to test for differences in tall fescue cover and vegetation height among airports, among tall fescue cultivars, and for interactions between these 2 factors. Fisher's protected LSD tests were used for multiple comparisons when treatment effects (e.g., airports, cultivars) were significant ($P < 0.05$).

RESULTS

Fall Seedings

When averaged across all tall fescue cultivars, tall fescue cover at airports seeded during the fall was 33% (range 3% to 65%) 12 months after seeding and 51% (range 32% to 71%) 24 months after seeding (Table 2). Variation in tall fescue establishment among airports was evident at the end of the first ($F_{3,47} = 920.13, P < 0.0001$) and second ($F_{2,35} = 129.74, P < 0.0001$) growing seasons; tall fescue cover was highest at the Capital City Regional Airport and lowest at the Williamson County Regional Airport.

When averaged across all tall fescue cultivars, tall fescue cover at airports seeded during the fall was 33% (range 31% to 39%) and 51% (range 43% to 60%) 12 and 24 months after seeding, respectively (Table 3). At the end of the first growing season, the average cover of ‘Kentucky-31’ tall fescue was higher ($F_{3,47} = 2.36, P = 0.03$) than the cover of the other 11 tall fescue cultivars. Tall fescue cover was not different ($F_{3,47} = 1.64, P = 0.16$) among the 12 cultivars when assessed 24 months after seeding.

Spring Seedings

When averaged across all tall fescue cultivars, tall fescue cover at airports seeded during the spring was 18% (range 1% to 50%) and 38% (range 19% to 52%) 12 and 24 months after seeding, respectively (Table 2). Variation in tall fescue establishment among airports was evident at the end of the first growing season ($F_{4,59} = 99.60, P < 0.0001$) and second ($F_{3,47} = 39.22, P < 0.0001$) growing seasons; tall fescue cover was highest at the Gerald R. Ford International Airport and lowest at the Birmingham-Shuttlesworth International Airport. Similarly, tall fescue cover varied ($F_{3,47} = 39.22, P < 0.0001$) among the airports after 24 months; the highest tall fescue cover occurred at Cleveland-Hopkins International Airport and the lowest at the St. Paul Downtown Airport.

When averaged across all tall fescue cultivars, tall fescue cover at airports seeded during the spring was 18%

(range 12% to 28%) 12 months after seeding and 39% (range 26% to 52%) 24 months after seeding (Table 4). At the end of the first growing season, tall fescue cover was not different ($F_{11,59} = 1.85, P = 0.07$) among the 12 cultivars. However, after 24 months tall fescue cover varied ($F_{11,47} = 2.86, P = 0.01$) among the 12 cultivars; the ‘Kentucky-31’ and ‘Rambler’ cultivars had the highest amount of tall fescue cover whereas the ‘Chocise III’ cultivar had the lowest.

DISCUSSION

Consistent with previous research efforts, the findings from this study suggest commercially available high-endophyte tall fescue turf-type cultivars might be favorable turfgrass cultivars to use in reseeding and vegetation renovation projects on airfields and other areas. Overall, tall fescue cultivars established and grew on the 9 airfields utilized during this study. These airfields were located in various parts of the eastern and central United States and represent a diversity of soils, climates, and other local conditions. Consequently, they add to the existing knowledge base regarding the use of tall fescue cultivars within actual airport environments. Although all of the tall fescue cultivars seeded at each airport provided at least some tall fescue cover after one or two growing seasons, not unexpectedly, variation in performance among tall fescue cultivars did occur (i.e., some cultivars established and grew better than others). This variation was much more prominent at some airfields (e.g., St. Paul Downtown Airport) than others (e.g., Capital City Regional Airport), which is likely a function of differences in local climate and growing conditions.

Abiotic factors, such as climatic conditions and soil nutrient levels, and biotic factors (e.g., weed competition) have strong influence on the rate of establishment of turfgrasses and other plants seeded as part of an airfield renovation or revegetation project. Further, these abiotic and biotic factors can vary greatly among airports, depending on the geographic location of those airports and the local geology and soil conditions. Some factors, such as weather, cannot be controlled or predicted, and thus these influences are not in the control of airfield managers. In contrast, other factors can be monitored and amended, using methods such as soil testing and fertilization, using good quality turfgrass seed, and applying appropriate chemical control (e.g., herbicides) to reduce weed competition. The very poor quality soils, resulting from previous strip mining operations at the site, resulted in little to no establishment of tall fescue cultivars at the Williamson County Regional Airport. Consequently, soil amendments (e.g., fertilizer, addition of topsoil) would be useful in increasing the establishment of vegetation on this airfield. As another example, at Westover Air Reserve Base high amounts of clovers (*Trifolium* spp. L.) were present in the plant community and provided intense competition for the seeded tall fescue cultivars. Selective herbicide appli-

Table 3. Average tall fescue cover (%) and vegetation height (cm) during the first and second growing seasons following fall seeding of 12 tall fescue cultivars at 4 airports during 2008-2010.

Tall fescue cultivar	Tall fescue			
	First growing season		Second growing season	
	Cover (%)	Height (cm)	Cover (%)	Height (cm)
Kentucky-31	39	16.8	60	16.7
2 nd Millennium	33	14.5	53	12.2
Crossfire II	31	15.8	46	11.8
Finesse II	31	15.1	50	13.0
Grande II	34	14.6	49	12.2
Mustang III	31	13.5	43	12.0
SR8600	33	13.7	51	12.0
Titan LTD	32	15.3	49	12.1
Inferno	33	14.5	52	12.7
Chocise III	31	14.7	51	12.2
Justice	34	14.0	51	11.3
Rambler	36	15.6	55	13.4

Table 4. Average tall fescue cover (%) and vegetation height (cm) during the first and second growing seasons following spring seeding of 12 tall fescue cultivars at 5 airports during 2008-2010.

Tall fescue cultivar	Tall fescue			
	First growing season		Second growing season	
	Cover (%)	Height (cm)	Cover (%)	Height (cm)
Kentucky-31	28	21.4	52	20.3
2 nd Millennium	22	22.5	36	15.0
Crossfire II	20	22.7	34	21.7
Finesse II	16	22.8	37	17.5
Grande II	17	19.2	41	19.6
Mustang III	16	24.7	32	19.6
SR8600	22	22.9	42	18.4
Titan LTD	16	22.1	36	17.8
Inferno	14	25.3	33	20.6
Chocise III	12	21.8	26	21.3
Justice	18	23.8	37	20.4
Rhambler	17	21.8	45	16.6

cations to remove the clovers and ultimately increase the coverage of tall fescue would be useful and effective in this and other situations.

Performance information of high endophyte tall fescue cultivars provided by this study, found within Washburn et al. (2007b) and within Washburn (2011), will be useful for airfield managers, grounds and maintenance personnel, and other individuals that are interested in selecting turfgrass cultivars for seeding or vegetation renovation projects on or near airfields. The experimental trials provide airport-specific recommendations regarding tall fescue cultivars for the 9 airfields where this study was conducted. In addition, this information can be used to make selections of tall fescue cultivars for other airports and facilities. Tall fescue cultivars that established and grew at individual airports is useful at other facilities within the same geographic region with similar soils, climate, and other local conditions.

Other sources of information regarding the utility of different tall fescue cultivars, such as the findings released by the National Turfgrass Evaluation Program (e.g., National Turfgrass Evaluation Program 2006), can be of assistance to airfield managers and other individuals interested in selecting turfgrass cultivars that might successfully establish and grow on airfields. However, caution is warranted when interpreting this information as the standard methods of turfgrass management (e.g., heavy irrigation, fertilization, and mowing) utilized in these studies (e.g., Asay et al. 2001, Asay et al. 2002) are very different than the low to no maintenance vegetation establishment and management methods used on airfields (e.g., seeded and “left alone”).

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LITERATURE CITED

- ASAY, K. H., K. B. JENSEN, and B. L. WALDRON. 2001. Responses of tall fescue cultivars to an irrigation gradient. *Crop Sci.* 41:350-357.
- ASAY, K. H., K. B. JENSEN, B. L. WALDRON, H. GUODONG, D. A. JOHNSON, and T. A. MONACO. 2002. Forage quality of tall fescue across an irrigation gradient. *Agron. J.* 94:1337-1343.
- BACON, C. W., and N. S. HILL. 1997. *Neotyphodium / grass Interactions*. Plenum Publishing Corp., New York, NY. 476 pp.
- BARNES, T. G., L. A. MADISON, J. D. SOLE, and M. J. LACKI. 1995. An assessment of habitat quality for northern bobwhite in tall fescue-dominated fields. *Wildl. Soc. Bull.* 23:231-237.
- BONHAM, C. D. 1989. *Measurements for Terrestrial Vegetation*. John Wiley and Sons, New York, NY. 338 pp.
- CASLER, M. D. 2006. Perennial grasses for turf, sport, and amenity uses: Evolution of form, function, and fitness for human benefit. *J. Agric. Sci.* 144:189-203.
- CONOVER, M. R., and T. A. MESSMER. 1996. Feeding preferences and changes in mass of Canada geese grazing endophyte-infected tall fescue. *Condor* 98:859-862.
- DEKKER, A., and F. F. VAN DER ZEE. 1996. Birds and grasslands on airports. *Proc., Bird Strike Committee Europe* 23:291-305.
- DOLBEER, R. A. 2006. Height distribution of birds as recorded by collisions with aircraft. *J. Wildl. Manage.* 70:1345-1350.
- DOLBEER, R. A., S. E. WRIGHT, and E. C. CLEARY. 2000. Ranking the hazard level of wildlife species to aviation. *Wildl. Soc. Bull.* 28:372-378.
- DOLBEER, R. A., S. E. WRIGHT, J. R. WELLER, and M. J. BEGIER. 2011. *Wildlife strikes to civil aircraft in the United States 1990 - 2009*. National Wildlife Strike Database, Serial Report Number 16, Federal Aviation Administration, Washington, D.C. 81 pp.
- JU, H. J., N. S. HILL, T. ABBOTT, and K. T. INGRAM. 2006. Temperature influences on endophyte growth in tall fescue. *Crop Sci.* 46:404-412.
- LINNELL, M. A., M. R. CONOVER, and T. J. OHASHI. 2009. Using wedelia as a ground cover on tropical airports to reduce bird activity. *Human-Wildl. Confl.* 3:226-236.
- MADEJ, C. W., and K. CLAY. 1991. Avian seed preference and weight loss experiments: The effect of fungal endophyte-infected tall fescue seeds. *Oecologia* 88:296-302.
- MEAD, H., and A. W. CARTER. 1973. The management of long grass as a bird repellent on airfields. *J. British Grassland Soc.* 28:219-221.

- MOHR, M. M., W. A. MEYER, and C. MANSUE. 2002. Incidence of *Neotyphodium* endophyte in seed lots of cultivars and selections of the 2001 national tall fescue test. *Rutgers Turfgrass Proc.*, Vol. 34, Atlantic City, NJ. 6 pp.
- NATIONAL TURFGRASS EVALUATION PROGRAM. 2006. 2001 National Tall Fescue Test, 2002–2005 Data. Final Report NTEP No. 06-12. Available electronically at www.ntep.org/tf.htm.
- SCHMIDT, S. P., and T. G. OSBORN. 1993. Effects of endophyte-infected tall fescue on animal performance. *Agric. Ecosys. Environ.* 44:233-262.
- WASHBURN, B. E. 2000. Ecological relationships among tall fescue, native warm-season grasses, and Eastern cottontail rabbits. Ph.D. dissert., Univ. of Kentucky, Lexington, KY. 162 pp.
- WASHBURN, B. E. 2011. Further investigations regarding tall fescue variety trials for airports. Final Project Report. Submitted to U.S. Department of Transportation, Federal Aviation Administration, William J. Hughes Technical Center, Atlantic City, NJ. 17 pp.
- WASHBURN, B. E., T. G. BARNES, and J. D. SOLE. 2000. Improving northern bobwhite habitat by converting tall fescue fields to native warm-season grasses. *Wildl. Soc. Bull.* 28:97-104.
- WASHBURN, B. E., S. C. BARRAS, and T. W. SEAMANS. 2007a. Foraging preferences of captive Canada geese related to turfgrass mixtures. *Human-Wildl. Confl.* 1:214-223.
- WASHBURN, B. E., G. E. BERNHARDT, and L. A. KUTSCHBACH-BROHL. 2011. Using dietary analyses to reduce the risk of wildlife-aircraft collisions. *Human-Wildl. Interact.* 5:204-209.
- WASHBURN, B. E., J. S. LOVEN, M. J. BEGIER, D. P. SULLIVAN, and H. A. WOODS. 2007b. Evaluating commercially available tall fescue cultivars for airports. *Proc., 2007 FAA Worldwide Airport Technology Transfer Conf.*, Atlantic City, NJ. 7 pp.
- WASHBURN, B. E., and T. W. SEAMANS. 2004. Management of vegetation to reduce wildlife hazards at airports. *In: Proc., 2004 FAA Worldwide Airport Technology Transfer Conference*, Atlantic City, NJ. 7 pp.
- WASHBURN, B. E., and T. W. SEAMANS. 2012. Foraging preferences of Canada geese among turfgrasses: Implications for reducing human-geese conflicts. *J. Wildl. Manage.* 76: 600-607.

From: [William Ballard](#)
To: [Stephanie Green](#)
Subject: FW: Cherry Capital Airport - Traverse City, MI
Date: Thursday, March 9, 2023 9:36:12 AM
Attachments: [image001.png](#)
[MeadHuntlogo_87950253-989c-49b2-a74f-a156c21c38dd.png](#)

Agency letter

Bill Ballard, AICP

Project Manager | Aviation
Direct: 517-908-3105 | Cell: 989-640-1060 | Transfer Files

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From: Castaldi, Duane <Duane.Castaldi@fema.dhs.gov>
Sent: Thursday, March 9, 2023 9:35 AM
To: William Ballard <william.ballard@meadhunt.com>
Subject: Cherry Capital Airport - Traverse City, MI

You don't often get email from duane.castaldi@fema.dhs.gov. [Learn why this is important](#)

Thank you for providing FEMA with your early coordination review letter for the Cherry Capital Airport. Because the project area is located outside of a FEMA mapped floodplain per Flood Insurance Rate Map Panel No. 26055C0227C dated 8/28/2018; FEMA will not be commenting on this project.

Duane Castaldi
Regional Environmental Officer | FEMA Region 5
Office: 312-408-5549 | Mobile: 312-576-0067
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Federal Emergency Management Agency
fema.gov



From: [William Ballard](#)
To: [Stephanie Green](#)
Subject: FW: EGLE comments for Cherry Capitol Airport Project, Traverse City MI
Date: Tuesday, February 28, 2023 9:54:20 AM
Attachments: [image001.png](#)
[MeadHuntlogo_87950253-989c-49b2-a74f-a156c21c38dd.png](#)
[20230228092131.pdf](#)

TVC early coordination letter.

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From: Golden, Luke (EGLE) <GoldenL3@michigan.gov>
Sent: Tuesday, February 28, 2023 9:48 AM
To: William Ballard <william.ballard@meadhunt.com>
Subject: EGLE comments for Cherry Capitol Airport Project, Traverse City MI

You don't often get email from goldenl3@michigan.gov. [Learn why this is important](#)

The Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division (WRD), has completed a preliminary review of your proposal to construct a localizer shelter and antenna on airport property near the runways. Your letter was received on February 13th, 2023 to supply comments from our division regarding your proposed project at the Cherry Capitol Airport, Traverse City MI.

Permits will not be required under the authority of Water Resources Protection; Part 301, Inland Lakes and Streams; and Part 303 Wetlands Protection of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Thank you for the opportunity to review and provide preliminary comments on this proposal. Should you have further questions or concerns, please feel free to contact me at 989-370-1569; GoldenL3@Michigan.gov; or EGLE, WRD, Cadillac District Office, 120 West Chapin Street, Cadillac Michigan 49601.

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Cadillac District Office
120 W. Chapin Street, Cadillac, MI 49601
phone: 989-370-1569

Fax: 231-775-1511
goldenl3@michigan.gov

www.michigan.gov/wetlands





DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, DETROIT DISTRICT
477 MICHIGAN AVENUE
DETROIT, MICHIGAN 48226-2550

March 1, 2023

Regulatory Branch
File No. LRE-2008-01021-228-A23

William Ballard
Mead & Hunt, Inc.
2605 Port Lansing Road
Lansing, Michigan 48906

Dear Mr. Ballard:

This is in response to Ms. Misty Peavler's letter dated February 13, 2023. Ms. Peavler's letter requested the Corps of Engineers' (Corps) comments and/or jurisdiction over installation of an Instrument Landing System (ILS) for runway 10 approach at the Cherry Capital Airport located at 727 Fly Don't Drive in Traverse City, Grand Traverse County, Michigan.

In 1984 a portion of the Corps' regulatory responsibilities was assumed by the Michigan Department of Environment, Great Lakes, and Energy (EGLE). This project site is within the assumed area. Unless otherwise notified, a separate authorization from the Corps is not required; however, you may need to obtain a permit from the EGLE. Therefore, we recommend that you contact the Josh Crane of the Cadillac District Office at (231) 577-8112 or CraneJ3@michigan.gov for a determination of State permit requirements.

Should you have any questions, please contact me by E-Mail at Mary.C.Anderson@usace.army.mil, or by telephone at (313) 226-2220. In all communications, please refer to File Number LRE-2008-01021-228-A23.

We are interested in your thoughts and opinions concerning your experience with the Detroit District, Corps of Engineers Regulatory Program. If you are interested in letting us know how we are doing, you can complete an electronic Customer Service Survey from our web site at: <https://regulatory.ops.usace.army.mil/customer-service-survey/>.

Alternatively, you may contact us and request a paper copy of the survey that you may complete and return to us by mail or fax. Thank you for taking the time to complete the survey, we appreciate your feedback.

Sincerely,

Mary C. Anderson

Mary C. Anderson
Project Manager
Compliance and Enforcement Section

Copy Furnished

Federal Aviation Administration / Misty Peavler

EGLE / Josh Crane

Grand Haven Field Office / J. Fritsma & N. Schulz

List of Agencies that Received Early Coordination Letters Requesting Information and Comments

Early Agency Coordination Letters - Distribution List

Salutation line	Contact Name	Title	Organization	Address	City, State, Zip	Phone
Ms. MacFarlane-Faes	Martha MacFarlane-Faes	Deputy State Historic Preservation Officer	State Historic Preservation Office, Michigan Historical Center	300 North Washington Square	Lansing, Michigan 48913	517-643-1928
Mr. Duffiney	Tony Duffiney	State Director	USDA - APHIS Wildlife Services	2803 Jolly Rd., Suite 100,	Okemos, MI 48864	517-336-1928
Mr. Watling	Jim Watling	Supervisor	EGLE, Water Resources Division, Transportation Review Unit	P.O. Box 30458	Lansing, MI 48909-7958	517-599-9002
Mr. Simon	Charlie Simon	Chief	U.S. Army Corps of Engineers, Detroit District, Regulatory & Permits	477 Michigan Avenue, Room 603	Detroit, MI 48226-2550	313-226-2218
Mr. Sivak	Thomas Sivak	Region 5 Administrator	Federal Emergency Management Agency, Region 5	536 South Clark Street, 6th Floor	Chicago, Illinois 60605	312-408-5500
Mr. Kimbrough	Jason Kimbrough	District Conservationist	USDA, Natural Resource Conservation Service, Traverse City Service Cen	1501 S Cass Street, Suite A	Traverse City, MI 49684-4187	(231) 941-0951 ext 3
Mr. Hicks	Scott Hicks	Field Office Supervisor	US Fish and Wildlife - Michigan Field Office	2651 Coolidge Road, Suite 101	East Lansing, Michigan 48823	517-351-6274
Ms. Shore	Debra Shore	Regional Administrator	EPA Region 5, NEPA Implementation Section	77 West Jackson Boulevard	Chicago, Illinois 60604	312-886-7425
Ms. Lott	Shannon Lott	Natural Resources Deputy	Michigan Department of Natural Resources, Executive Division	P.O. Box 30028	Lansing, MI 48909	517-243-3166/517-284-5810

Local & Political Coordination - Master List

Mr. Vandercook	Terry Vandercook	Chief Executive Officer	Networks Northwest	PO Box 506	Traverse City, MI 49685-0506	800-692-7774
Mr. Alger	Nate Alger	County Administrator	Grand Traverse County	400 Boardman Avenue	Traverse City, MI 49684	231-922-4780
Mr. Winter	Shawn Winter	Planning Director	City of Traverse City, Planning Dept	400 Boardman Avenue, Governmental Center 2nd Floor	Traverse City, MI 49684	(231) 922-4460

List of Tribes that Received Early Coordination Letters Requesting Information and Comments

Native American Coordination Letters - Distribution List

Salutation line	Contact Name	Title	Organization	Address	City, State, Zip	Phone
Chairperson			Bay Mills Indian Community of Michigan	12140 West Lakeshore Drive	Brimley, MI 49175	
Chairperson			Grand Traverse Band of Ottawa and Chippewa Indians of Michigan	2605 NW Bayshore Drive	Suttons Bay, MI 49682	
Chairperson			Hannahville Indian Community of Michigan	N14911 Hannahville B1 Road	Wilson, MI 49896-9728	
Chairperson			Huron Potawatomi, Inc	2221 1-1/2 Mile Road	Fulton, MI 49052	
Chairperson			Keweenaw Bay Indian Community of Michigan	Keweenaw Bay Tribal Center, 107 Beartown Road	Baraga, MI 49908	
Chairperson			Lac Vieux Desert Band of Lake Superior Chippewa of Michigan	PO Box 249 - Choate Road	Watersmeet, MI 49969	
Chairperson			Little River Band of Ottawa Indians	375 River Street	Manistee, MI 49660	
Chairperson			Little Traverse Bay Bands of Odawa Indians	7500 Odawa Circle	Harbor Springs, MI 49740-9692	
Chairperson			Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians	PO Box 218, 1743 142nd Avenue	Dorr, MI 48323	
Chairperson			Pokagon Band of Potawatomi Indians of Michigan	PO Box 180, 901 Spruce Street	Dowagiac, MI 49047	
Chairperson			Saginaw Chippewa Indian Trive of Michigan	7070 East Broadway	Mt. Pleasant, MI 48858	
Chairperson			Sault-Ste. Marie Tribe of Chippewa Indians of Michigan	523 Ashman Street	Sault Ste. Marie, MI 49783	
Chairperson			Burt Lake Band of Ottawa and Chippewa Indians	6461 Brutus Road, Box 206	Brutus, MI 49716	
Chairperson			Grand River Band of Ottawa Indians	549 Lydia	NE Grand River, MI 49503	

Example of Letter Sent to Federal, State, and Local Agencies

Date

«Contact_Name»

«Title»

«Organization»

«Address»

«City_State_Zip»

Re: Early Coordination Review of Proposed Improvements
Cherry Capital Airport, Traverse City, Michigan

Dear «Salutation_line»:

The Federal Aviation Administration (FAA) has authorized the Cherry Capital Airport (TVC) to install an Instrument Landing System (ILS) for the Runway 10 approach. The proposed project would consist of a localizer, localizer shelter, and an ILS antenna. The proposed project is depicted on TVC's approved Airport Layout Plan (ALP). The ILS antenna will be installed on the airfield, at the southwest intersection of Taxiway C and Taxiway D, north of Runway 10/28. The future localizer shelter will be installed adjacent to the existing medium-intensity approach lighting system (MALSR) shelter, off the end of Runway 28.

Installation of the ILS to Runway 10 will increase the ability for aircraft to safely land during instrument meteorological conditions (IMC) that result due to low ceilings or reduced visibility because of fog, rain, or blowing snow. The ILS will increase the reliability and safety of air carrier operations during inclement weather.

The Passenger Facility Charge (PFC) Program will be used to provide funding for the proposed ILS project. The use of PFC funding requires that environmental documentation and analysis sufficient to satisfy the National Environmental Policy Act (NEPA) is completed. To meet this requirement, the Federal Aviation Administration (FAA) Environmental Evaluation Form C, Short Form Environmental Assessment (Short Form EA), will be used to define and analyze potential impacts of the proposed action and evaluate any reasonable alternatives.

This Short Form EA will also be developed to further determine whether any potential impacts are significant enough to necessitate an Environmental Impact Statement (EIS). During the Short Form EA project, investigations will be conducted to identify potential Social, Economic, and Environmental (SEE) impacts related to the improvements being considered. These SEE impacts will be documented and considered as required by NEPA.

The FAA is the lead agency and as such, the Short Form EA will be prepared in accordance with NEPA, FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B. *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*.

It should be noted that FAA does not necessarily endorse the proposed project, nor have they agreed to a Preferred Alternative. FAA is requiring the Airport to fully evaluate the Purpose and Need, any reasonable alternatives including the No Action Alternative, and identify associated impacts leading to the selection of the Preferred Alternative.

A summary of the proposed action includes:

- Installation of a localizer, localizer shelter, and an ILS antenna on Airport property

As part of our early agency coordination, we are attempting to identify key issues that will need to be addressed during the NEPA process. To accomplish this, your organization's comments are being requested for the above referenced project as it relates to the following:

- Your specific areas of concern / regulatory jurisdiction
- Specific benefits of the project for your organization or to the public
- Any available technical information / data for the project site
- Potential mitigation / permitting requirements for project implementation

For your convenience, several maps and figures are enclosed that illustrate the Airport's location and approximate project area limits. In order to sufficiently address key project issues and maintain the project schedule, your comments are requested by **Date**.

Please send your written or email comments to:

MEAD & HUNT, Inc.
William Ballard, AICP
2605 Port Lansing Road
Lansing, MI 48906
517-321-8334 | william.ballard@meadhunt.com

Sincerely,

Misty Peavler
Environmental Protection Specialist
Federal Aviation Administration (FAA)

Enclosures

Cc: Kevin Klein, CEO, Cherry Capital Airport
William Ballard, Mead & Hunt

Example of Letters Sent to Tribal Nations

Date

«Contact_Name»

«Title»

«Organization»

«Address»

«City_State_Zip»

Re: Early Coordination Review of Proposed Improvements
Cherry Capital Airport, Traverse City, Michigan

Dear Chairperson:

The Federal Aviation Administration (FAA) has authorized the Cherry Capital Airport (TVC) to install an Instrument Landing System (ILS) for the Runway 10 approach. The proposed project would consist of a localizer, localizer shelter, and an ILS antenna. The proposed project is depicted on TVC's approved Airport Layout Plan (ALP). The ILS antenna will be installed on the airfield, at the southwest intersection of Taxiway C and Taxiway D, north of Runway 10/28. The future localizer shelter will be installed adjacent to the existing medium-intensity approach lighting system (MALSR) shelter, off the end of Runway 28.

Installation of the ILS to Runway 10 will increase the ability for aircraft to safely land during instrument meteorological conditions (IMC) that result due to low ceilings or reduced visibility because of fog, rain, or blowing snow. The ILS will increase the reliability and safety of air carrier operations during inclement weather.

The Passenger Facility Charge (PFC) Program will be used to provide funding for the proposed ILS project. The use of PFC funding requires that environmental documentation and analysis sufficient to satisfy the National Environmental Policy Act (NEPA) is completed. To meet this requirement, the Federal Aviation Administration (FAA) Environmental Evaluation Form C, Short Form Environmental Assessment (Short Form EA), developed by the FAA's Eastern Region will be used to define and analyze potential impacts of the proposed action and evaluate any reasonable alternatives.

A summary of the proposed action includes:

- Installation of a localizer, localizer shelter, and an ILS antenna on Airport property

The FAA would be pleased to receive your comments regarding this project, any information you wish to share pertaining to archaeological or historical resources located in the project area, or notification that you would like to become an interested party under Section 106 of the National Historic Preservation Act. In order to sufficiently address key project issues and maintain the project schedule, your comments are requested by **date**.

Your response should be addressed to:

Misty Peavler
Environmental Protection Specialist
Federal Aviation Administration
Detroit - Airports District Office
11677 S Wayne Rd, Ste 107
Romulus, MI 48174-1412
misty.peavler@faa.gov

Sincerely,

Misty Peavler
Environmental Protection Specialist

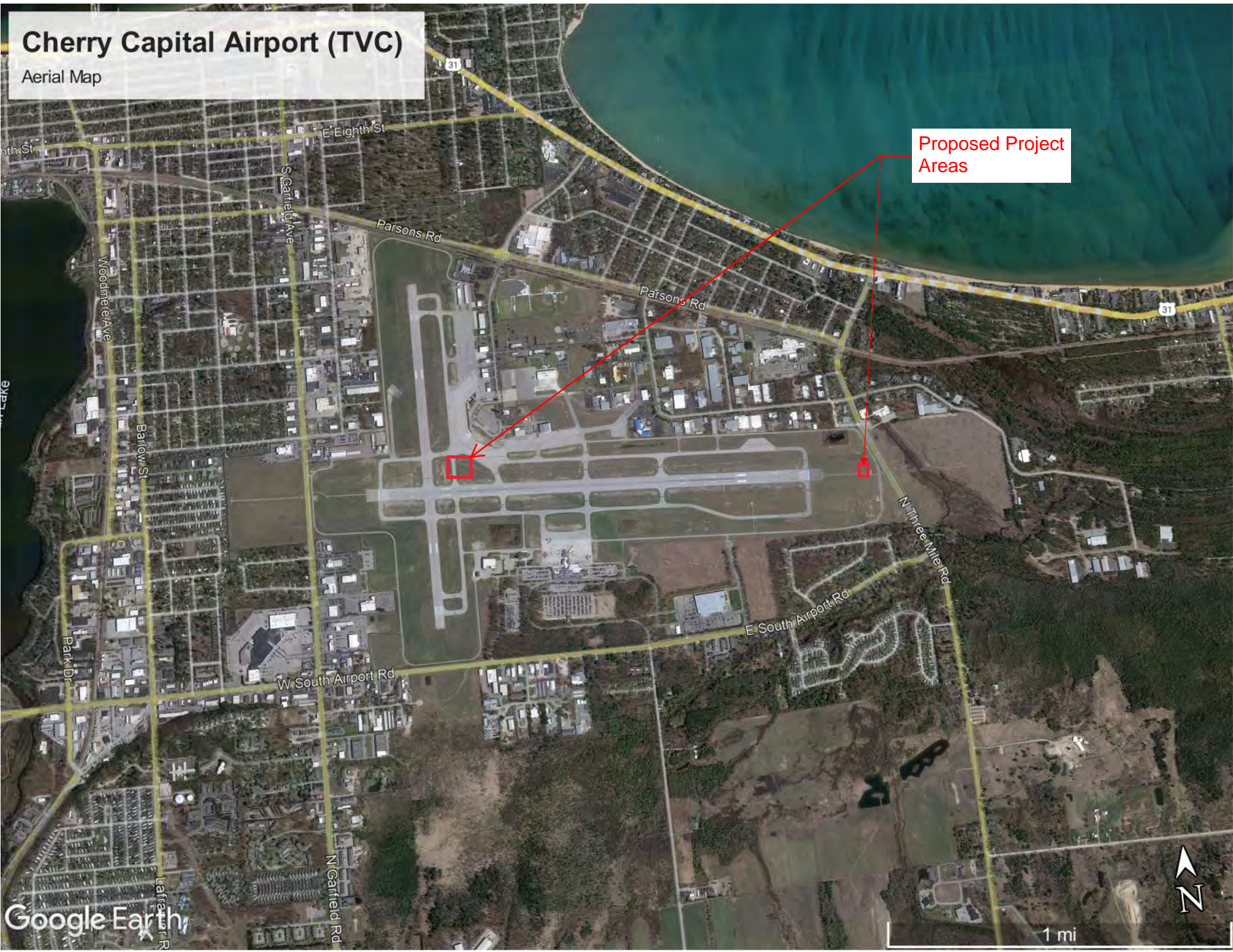
Enclosures

cc: Kevin Klein, CEO, Cherry Capital Airport
William Ballard, Mead & Hunt

Cherry Capital Airport (TVC)

Aerial Map

Proposed Project Areas

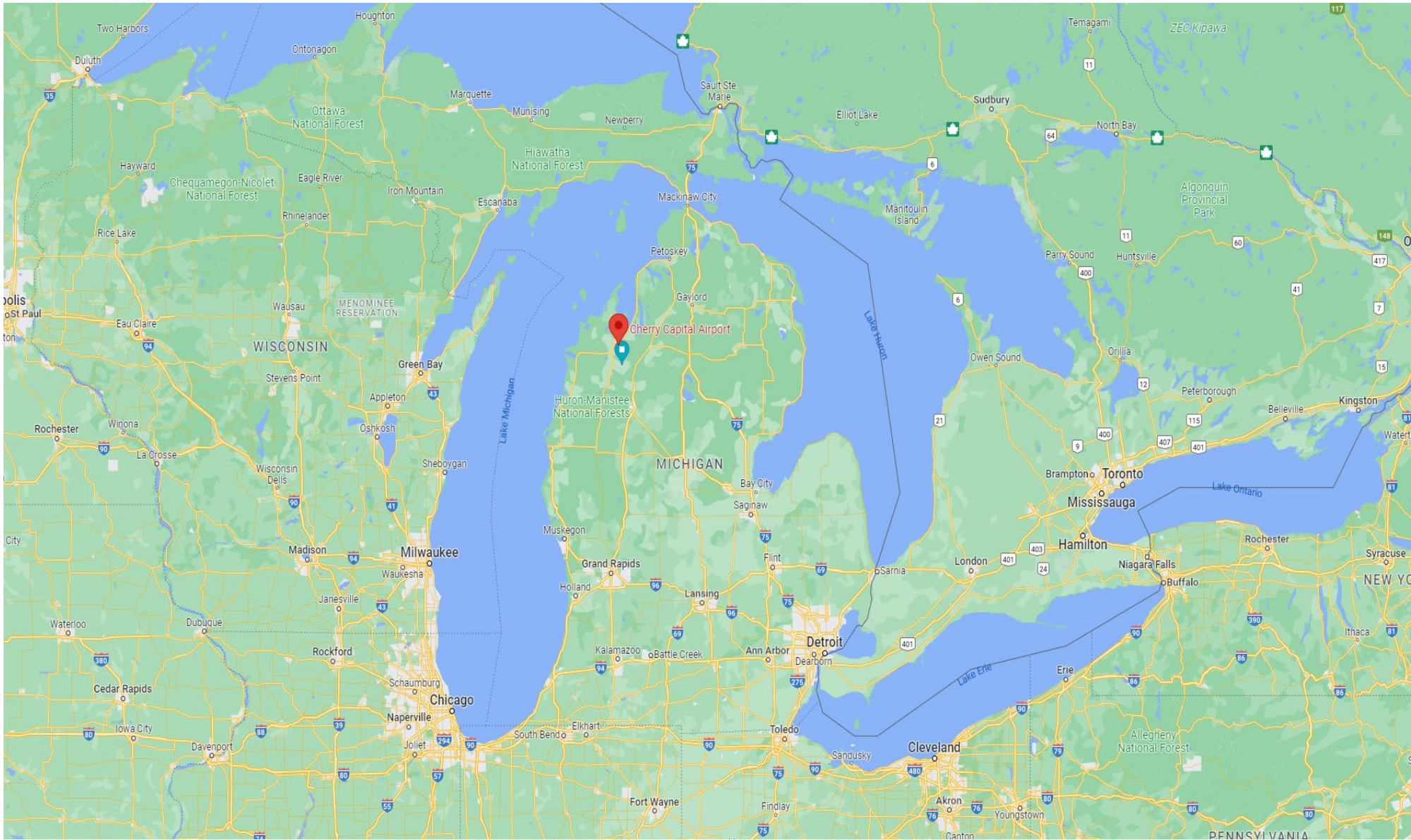


Google Earth

1 mi



Google TVC Location Map



Cherry Capital Airport (TVC)

Vicinity Map

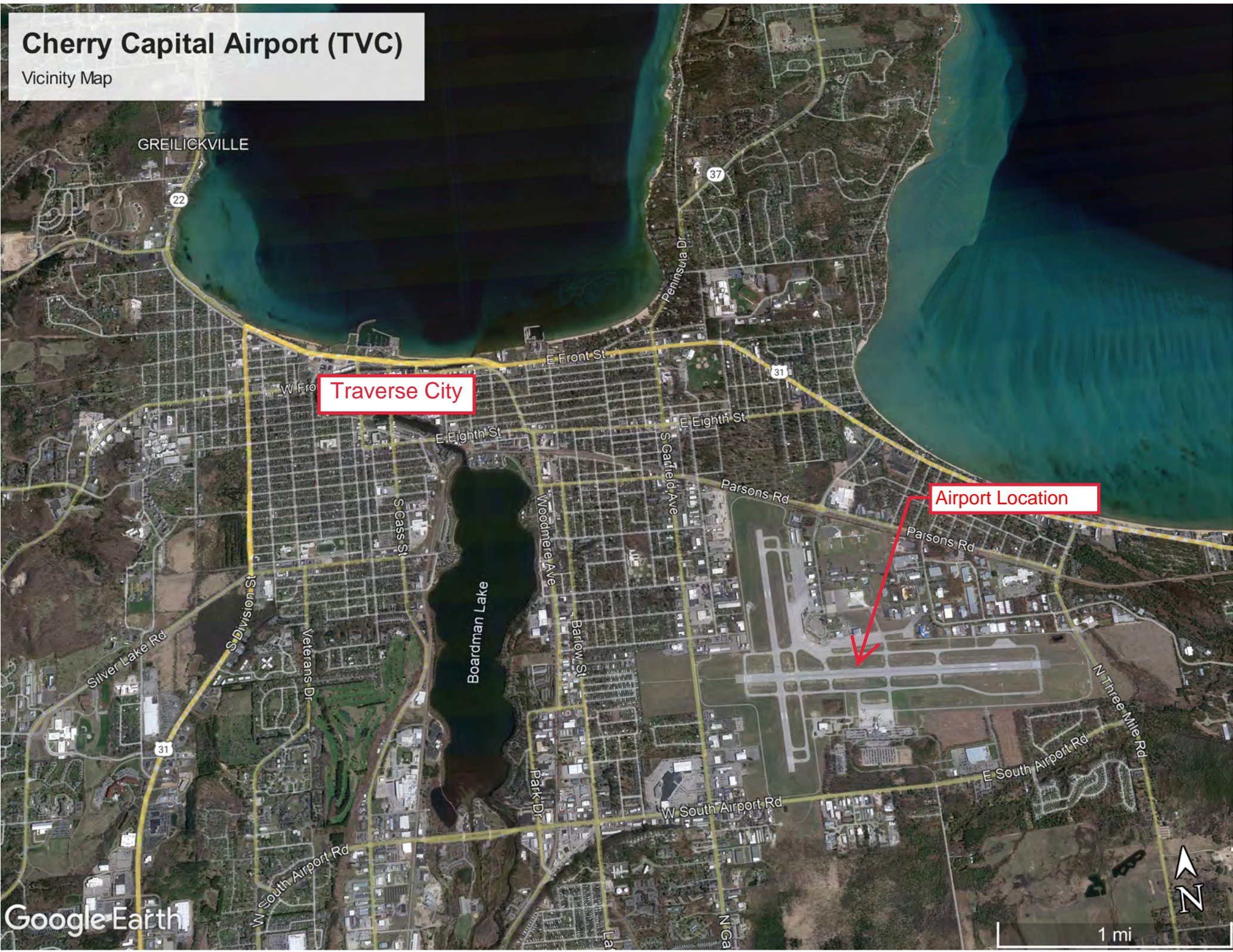
GREILICKVILLE

Traverse City

Airport Location

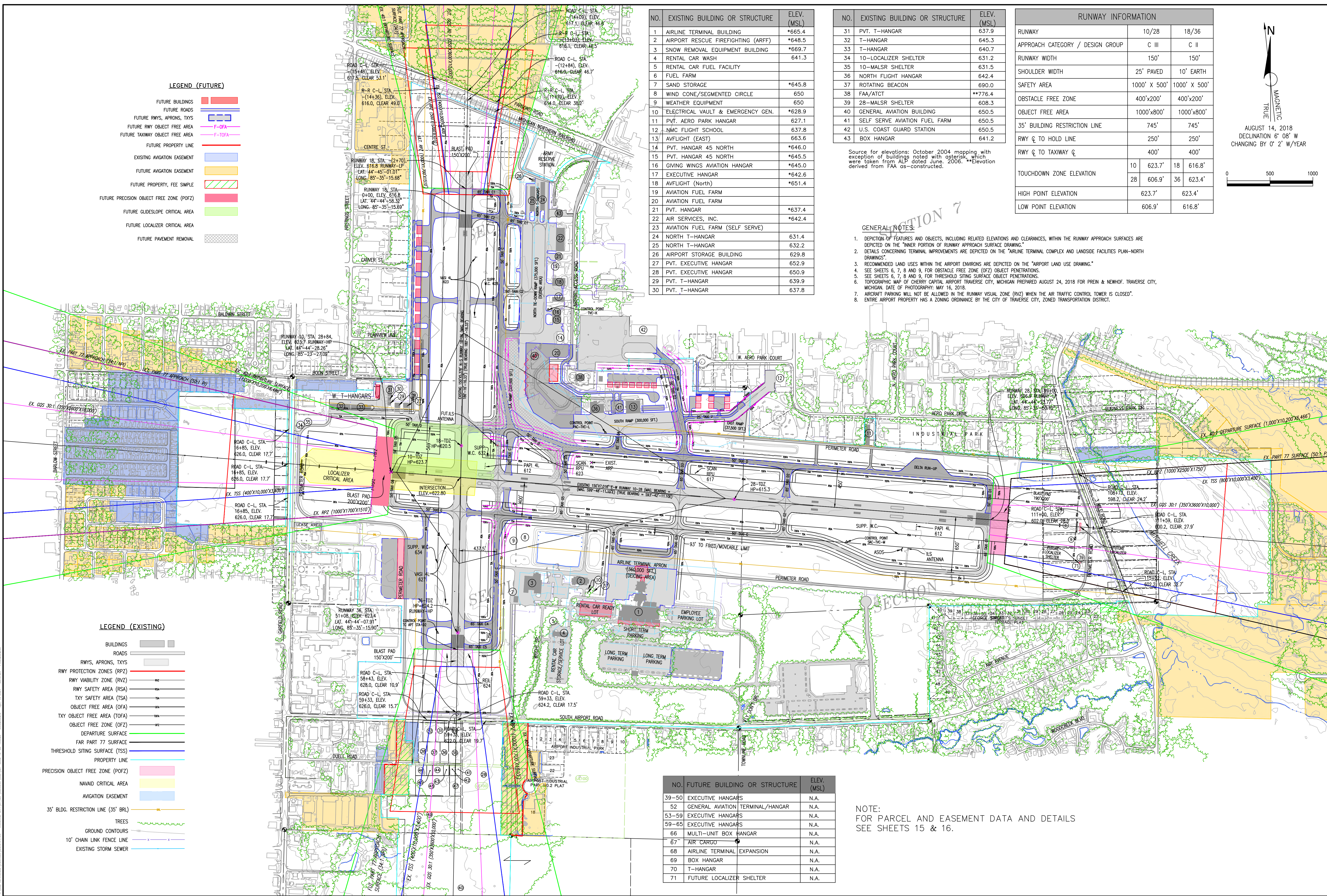
Google Earth

1 mi



Appendix B

TVC Airport Layout Plan



LEGEND (FUTURE)

- FUTURE BUILDINGS
- FUTURE ROADS
- FUTURE RWYS, APRONS, TXYS
- FUTURE RMY OBJECT FREE AREA
- FUTURE TAXIWAY OBJECT FREE AREA
- FUTURE PROPERTY LINE
- EXISTING AVIATION EASEMENT
- FUTURE AVIATION EASEMENT
- FUTURE PROPERTY, FEE SIMPLE
- FUTURE PRECISION OBJECT FREE ZONE (POFZ)
- FUTURE GUIDESLOPE CRITICAL AREA
- FUTURE LOCALIZER CRITICAL AREA
- FUTURE PAVEMENT REMOVAL

LEGEND (EXISTING)

- BUILDINGS
- ROADS
- RWYS, APRONS, TXYS
- RMY PROTECTION ZONES (RPZ)
- RMY VIABILITY ZONE (RVZ)
- RMY SAFETY AREA (RSA)
- TXY SAFETY AREA (TSA)
- OBJECT FREE AREA (OFA)
- TXY OBJECT FREE AREA (TOFA)
- OBJECT FREE ZONE (OFZ)
- DEPARTURE SURFACE
- FAR PART 77 SURFACE
- THRESHOLD SITING SURFACE (TSS)
- PROPERTY LINE
- PRECISION OBJECT FREE ZONE (POFZ)
- NAVED CRITICAL AREA
- AVIATION EASEMENT
- 35' BLDG. RESTRICTION LINE (35' BRL)
- TREES
- GROUND CONTOURS
- 10' CHAIN LINK FENCE LINE
- EXISTING STORM SEWER

NO.	EXISTING BUILDING OR STRUCTURE	ELEV. (MSL)
1	AIRLINE TERMINAL BUILDING	*665.4
2	AIRPORT RESCUE FIREFIGHTING (ARFF)	*648.5
3	SNOW REMOVAL EQUIPMENT BUILDING	*669.7
4	RENTAL CAR WASH	641.3
5	RENTAL CAR FUEL FACILITY	
6	FUEL FARM	
7	SAND STORAGE	*645.8
8	WIND CONE/SEGMENTED CIRCLE	650
9	WEATHER EQUIPMENT	650
10	ELECTRICAL VAULT & EMERGENCY GEN.	*628.9
11	PVT. AERO PARK HANGAR	627.1
12	NMC FLIGHT SCHOOL	637.8
13	AVFLIGHT (EAST)	663.6
14	PVT. HANGAR 45 NORTH	*646.0
15	PVT. HANGAR 45 NORTH	*645.5
16	GIVING WINGS AVIATION HANGAR	*645.0
17	EXECUTIVE HANGAR	*642.6
18	AVFLIGHT (North)	*651.4
19	AVIATION FUEL FARM	
20	AVIATION FUEL FARM	
21	PVT. HANGAR	*637.4
22	AIR SERVICES, INC.	*642.4
23	AVIATION FUEL FARM (SELF SERVE)	
24	NORTH T-HANGAR	631.4
25	NORTH T-HANGAR	632.2
26	AIRPORT STORAGE BUILDING	629.8
27	PVT. EXECUTIVE HANGAR	652.9
28	PVT. EXECUTIVE HANGAR	650.9
29	PVT. T-HANGAR	639.9
30	PVT. T-HANGAR	637.8

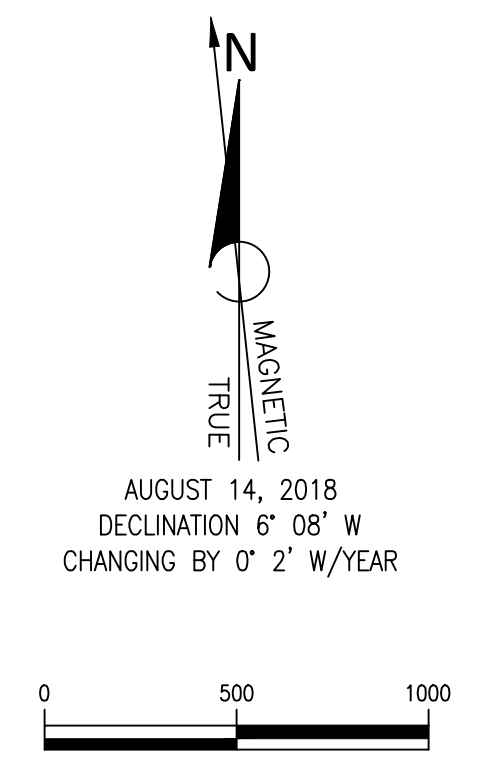
NO.	EXISTING BUILDING OR STRUCTURE	ELEV. (MSL)
31	PVT. T-HANGAR	637.9
32	T-HANGAR	645.3
33	T-HANGAR	640.7
34	10-LOCALIZER SHELTER	631.2
35	10-MALSR SHELTER	631.5
36	NORTH FLIGHT HANGAR	642.4
37	ROTATING BEACON	690.0
38	FAA/ATCT	**776.4
39	28-MALSR SHELTER	608.3
40	GENERAL AVIATION BUILDING	650.5
41	SELF SERVE AVIATION FUEL FARM	650.5
42	U.S. COAST GUARD STATION	650.5
43	BOX HANGAR	641.2

Source for elevations: October 2004 mapping with exception of buildings noted with asterisk which were taken from ALP dated June, 2006. **Elevation derived from FAA as-constructed.

RUNWAY INFORMATION		
RUNWAY	10/28	18/36
APPROACH CATEGORY / DESIGN GROUP	C III	C II
RUNWAY WIDTH	150'	150'
SHOULDER WIDTH	25' PAVED	10' EARTH
SAFETY AREA	1000' X 500'	1000' X 500'
OBSTACLE FREE ZONE	400'x200'	400'x200'
OBJECT FREE AREA	1000'x800'	1000'x800'
35' BUILDING RESTRICTION LINE	745'	745'
RWY C TO HOLD LINE	250'	250'
RWY C TO TAXIWAY C	400'	400'
TOUCHDOWN ZONE ELEVATION	10 623.7' 18 616.8'	
HIGH POINT ELEVATION	28 606.9' 36 623.4'	
LOW POINT ELEVATION	606.9'	616.8'

GENERAL NOTES:

- DEPICTION OF FEATURES AND OBJECTS, INCLUDING RELATED ELEVATIONS AND CLEARANCES, WITHIN THE RUNWAY APPROACH SURFACES ARE DEPICTED ON THE "INNER PORTION OF RUNWAY APPROACH SURFACE DRAWING".
- DETAILS CONCERNING TERMINAL IMPROVEMENTS ARE DEPICTED ON THE "AIRLINE TERMINAL COMPLEX AND LANDSIDE FACILITIES PLAN-NORTH DRAWINGS".
- RECOMMENDED LAND USES WITHIN THE AIRPORT ENVIRONS ARE DEPICTED ON THE "AIRPORT LAND USE DRAWING".
- SEE SHEETS 6, 7, 8 AND 9, FOR OBSTACLE FREE ZONE (OFZ) OBJECT PENETRATIONS.
- SEE SHEETS 6, 7, 8 AND 9, FOR THRESHOLD SITING SURFACE OBJECT PENETRATIONS.
- TOPOGRAPHIC MAP OF CHERRY CAPITAL AIRPORT TRAVERSE CITY, MICHIGAN PREPARED AUGUST 24, 2018 FOR PREIN & NEWHOFF, TRAVERSE CITY, MICHIGAN. DATE OF PHOTOGRAPHY: MAY 16, 2018.
- AIRCRAFT PARKING WILL NOT BE ALLOWED IN THE RUNWAY VISUAL ZONE (RVZ) WHEN THE AIR TRAFFIC CONTROL TOWER IS CLOSED*.
- ENTIRE AIRPORT PROPERTY HAS A ZONING ORDINANCE BY THE CITY OF TRAVERSE CITY, ZONED TRANSPORTATION DISTRICT.



NO.	FUTURE BUILDING OR STRUCTURE	ELEV. (MSL)
39-50	EXECUTIVE HANGARS	N.A.
52	GENERAL AVIATION TERMINAL/HANGAR	N.A.
53-59	EXECUTIVE HANGARS	N.A.
59-65	EXECUTIVE HANGARS	N.A.
66	MULTI-UNIT BOX HANGAR	N.A.
67	AIR CARGO	N.A.
68	AIRLINE TERMINAL EXPANSION	N.A.
69	BOX HANGAR	N.A.
70	T-HANGAR	N.A.
71	FUTURE LOCALIZER SHELTER	N.A.

NOTE:
FOR PARCEL AND EASEMENT DATA AND DETAILS
SEE SHEETS 15 & 16.

CHERRY CAPITAL AIRPORT
TRAVERSE CITY, MICHIGAN
FUTURE AIRPORT LAYOUT PLAN

DRAWN	CHRISTENSEN	JAN 2019	CHECKED	VAN DUINEN	JAN 2019
DATE			DATE		

NO.	BY	DATE
1	JV	04-13-21
2	JV	01-15-21
3	JV	08-12-20

MI SITE NO 28-01
LOC ID TVC

DRAWING NO. 76

Prein&Newhof
Engineers - Surveyors - Environmental Laboratory

TVC
Your Northern Michigan Connection

Appendix C

FAA Form 5010, dated March 2023



> 1 ASSOC CITY: TRAVERSE CITY 4 STATE: MI LOC ID: TVC FAA SITE NR: 10379.*A
> 2 AIRPORT NAME: CHERRY CAPITAL 5 COUNTY: GRAND TRAVERSE, MI
3 CBD TO AIRPORT (NM): 2 S 6 REGION/ADO: AGL /DET 7 SECT AERO CHT: GREEN BAY

GENERAL		SERVICES	BASED AIRCRAFT
10 OWNERSHIP: PUBLIC		> 70 FUEL: 100LL A+	90 SINGLE ENG: 98
> 11 OWNER: NORTHWEST RGNL AIRPORT AUTHORITY		> 71 AIRFRAME RPRS: MAJOR	91 MULTI ENG: 15
> 12 ADDRESS: 727 FLY DONT DR		> 72 PWR PLANT RPRS: MAJOR	92 JET: 5
TRAVERSE CITY, MI 49686-3591		> 73 BOTTLE OXYGEN:	93 HELICOPTERS: 7
> 13 PHONE NR: 231-947-2250		> 74 BULK OXYGEN:	TOTAL: 125
> 14 MANAGER: KEVIN C KLEIN, AAE		75 TSNT STORAGE: HGR TIE	94 GLIDERS: 0
> 15 ADDRESS: 727 FLY DONT DR		76 OTHER SERVICES: AFRT,AGRI,AMB,AVNCS,CARGO,CHTR,INSTR,RNTL	95 MILITARY: 0
TRAVERSE CITY, MI 49686-3591			96 ULTRA-LIGHT: 0
> 16 PHONE NR: 231-947-2250			
> 17 ATTENDANCE SCHEDULE:			
MONTHS ALL	DAYS ALL	HOURS 0400-0100	

18 AIRPORT USE: PUBLIC		FACILITIES	OPERATIONS
19 ARPT LAT: 44-44-29.683N ESTIMATED		> 80 ARPT BCN: WG	100 AIR CARRIER: 10,920
20 ARPT LONG: 85-34-54.732W		> 81 ARPT LGT SKED: SEE RMK	102 AIR TAXI: 8,089
21 ARPT ELEV: 623.9 SURVEYED		BCN LGT SKED: SS-SR	103 G A LOCAL: 41,103
22 ACREAGE: 1,026		> 82 UNICOM: 122.950	104 G A ITRNRT: 34,611
> 23 RIGHT TRAFFIC: NO		> 83 WIND INDICATOR: YES-L	105 MILITARY: 6,383
> 24 NON-COMM LANDING: YES		84 SEGMENTED CIRCLE: YES	TOTAL: 101,106
25 NPIAS/FED AGREEMENTS: YES / NGPVY3		85 CONTROL TWR: YES	
> 26 FAR 139 INDEX: I B S 05/1973		86 FSS: LANSING	
		87 FSS ON ARPT: NO	OPERATIONS FOR 12
		88 FSS PHONE NR:	MONTHS ENDING 12/31/2021
		89 TOLL FREE NR: 1-800-WX-BRIEF	

RUNWAY DATA

> 30 RUNWAY IDENT:

> 31 LENGTH:

> 32 WIDTH:

> 33 SURF TYPE-COND:

> 34 SURF TREATMENT:

35 GROSS WT: S

36 (IN THSDS) D

37 2D

38 2D/2DS

> 39 PCN / PCR:

10/28	18/36
7,016	5,378
150	150
ASPH-F	ASPH-F
GRVD	GRVD
120.0	70.0
230.0	110.0
440.0	190.0
56/F/A/X/T (PCN)	31/F/A/X/T (PCN)

LIGHTING/APCH AIDS

> 40 EDGE INTENSITY:

> 42 RWY MARK TYPE-COND:

> 43 VGS:

44 THR CROSSING HGT:

45 VISUAL GLIDE ANGLE:

> 46 CNTRLN-TDZ:

> 47 RVR-RVV:

> 48 REIL:

> 49 APCH LIGHTS:

HIGH	MED
PIR- G / PIR- G	NPI- G / NPI- G
P4L / P4L	V4L / V4L
55 / 45	47 / 53
3.00 / 3.00	3.00 / 3.50
N - N / N - N	N - N / N - N
- N / - N	- N / - N
N / N	N / Y
MALSR / MALSR	/

OBSTRUCTION DATA

50 FAR 77 CATEGORY:

> 51 DISPLACED THR:

> 52 CTLG OBSTN:

> 53 OBSTN MARKED/LGTD:

> 54 HGT ABOVE RWY END:

> 55 DIST FROM RWY END:

> 56 CNTRLN OFFSET:

57 OBSTN CLNC SLOPE:

58 CLOSE-IN OBSTN:

C / PIR	C / C
/	272 /
TREE / TOWER	TREE / FENCE
/L	/
80 / 452	70 / 14
3,209 / 16,493	1,199 / 769
187R / 2359L	148L / 0B
37:1 / 36:1	14:1 / 40:1
N / N	N / N

DECLARED DISTANCES

> 60 TAKE OFF RUN AVBL (TORA):

> 61 TAKE OFF DIST AVBL (TODA):

> 62 ACLT STOP DIST AVBL (ASDA):

> 63 LNDG DIST AVBL (LDA):

7,016 / 7,016	5,378 / 5,378
7,016 / 7,016	5,378 / 5,378
7,016 / 7,016	5,108 / 5,108
7,016 / 7,016	4,838 / 5,108

(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

> 110 REMARKS:

A 017 DURG HRS WHEN ARPT IS UNATNDD CALL ARPT OPNS 231-313-0928. FOR FBO HRS OF OPS CALL 231-929-1126.

A 026 48 HR PPR FOR UNSKED ACR OPS WITH OVER 30 PSGR SEATS - CALL AMGR.

A 057 RWY 18 DTHR APCH SLOPE 19:1.

A 070 100LL SELF SVC FUEL AVBL WITH CREDIT CARD DURG FBO HRS ONLY.

A 081 WHEN ATCT CLSD ACTVT MALSR RWY 10 & 28; REIL RWY 36; HIRL RWY 10/28; MIRL RWY 18/36 - CTAF. PAPI RWY 10 & 28; VASI RWY 18 & 36 OPR CONSLY.

A 110-002 BIRDS ON AND INVOF ARPT.

A 110-003 SNOW REMOVAL OPNS IN PROGRESS WINTER MONTHS; SNOW COMMAND WILL BE MONITORING CTAF DURING NON-ATCT HOURS. ACFT LNDG/ DEPARTING TVC SHOULD ANNOUNCE THEIR INTENTIONS ON CTAF WHEN ATCT CLSD.

111 INSPECTOR: (F) 112 LAST INSP: 08/17/2021 113 LAST INFO RES:



> 1 ASSOC CITY: TRAVERSE CITY 4 STATE: MI LOC ID: TVC FAA SITE NR: 10379.*A
> 2 AIRPORT NAME: CHERRY CAPITAL 5 COUNTY: GRAND TRAVERSE, MI
3 CBD TO AIRPORT (NM): 2 S 6 REGION/ADO: AGL /DET 7 SECT AERO CHT: GREEN BAY

GENERAL

10 OWNERSHIP: PUBLIC
> 11 OWNER: NORTHWEST RGNL AIRPORT AUTHORITY
> 12 ADDRESS: 727 FLY DONT DR
TRAVERSE CITY, MI 49686-3591
> 13 PHONE NR: 231-947-2250
> 14 MANAGER: KEVIN C KLEIN, AAE
> 15 ADDRESS: 727 FLY DONT DR
TRAVERSE CITY, MI 49686-3591

> 16 PHONE NR: 231-947-2250

> 17 ATTENDANCE SCHEDULE:

MONTHS	DAYS	HOURS
ALL	ALL	0400-0100

18 AIRPORT USE: PUBLIC
19 ARPT LAT: 44-44-29.683N ESTIMATED
20 ARPT LONG: 85-34-54.732W
21 ARPT ELEV: 623.9 SURVEYED
22 ACREAGE: 1,026
> 23 RIGHT TRAFFIC: NO
> 24 NON-COMM LANDING: YES
25 NPIAS/FED AGREEMENTS: YES / NGPVY3
> 26 FAR 139 INDEX: I B S 05/1973

SERVICES

> 70 FUEL: 100LL A+
> 71 AIRFRAME RPRS: MAJOR
> 72 PWR PLANT RPRS: MAJOR
> 73 BOTTLE OXYGEN:
> 74 BULK OXYGEN:
75 TSNT STORAGE: HGR TIE
76 OTHER SERVICES: AFRT,AGRI,AMB,
AVNCS,CARGO,CHTR,
INSTR,RNTL

BASED AIRCRAFT

90 SINGLE ENG:	98
91 MULTI ENG:	15
92 JET:	5
93 HELICOPTERS:	7
TOTAL:	125
94 GLIDERS:	0
95 MILITARY:	0
96 ULTRA-LIGHT:	0

FACILITIES

> 80 ARPT BCN: WG
> 81 ARPT LGT SKED: SEE RMK
BCN LGT SKED: SS-SR
> 82 UNICOM: 122.950
> 83 WIND INDICATOR: YES-L
84 SEGMENTED CIRCLE: YES
85 CONTROL TWR: YES
86 FSS: LANSING
87 FSS ON ARPT: NO
88 FSS PHONE NR:
89 TOLL FREE NR: 1-800-WX-BRIEF

OPERATIONS

100 AIR CARRIER:	10,920
102 AIR TAXI:	8,089
103 G A LOCAL:	41,103
104 G A ITRNRT:	34,611
105 MILITARY:	6,383
TOTAL:	101,106
OPERATIONS FOR 12 MONTHS ENDING 12/31/2021	

RUNWAY DATA

> 30 RUNWAY IDENT:
> 31 LENGTH:
> 32 WIDTH:
> 33 SURF TYPE-COND:
> 34 SURF TREATMENT:
35 GROSS WT: S
36 (IN THSDS) D
37 2D
38 2D/2DS
> 39 PCN / PCR:

LIGHTING/APCH AIDS

> 40 EDGE INTENSITY:
> 42 RWY MARK TYPE-COND:
> 43 VGS:
44 THR CROSSING HGT:
45 VISUAL GLIDE ANGLE:
> 46 CNTRLN-TDZ:
> 47 RVR-RVV:
> 48 REIL:
> 49 APCH LIGHTS:

OBSTRUCTION DATA

50 FAR 77 CATEGORY:
> 51 DISPLACED THR:
> 52 CTLG OBSTN:
> 53 OBSTN MARKED/LGTD:
> 54 HGT ABOVE RWY END:
> 55 DIST FROM RWY END:
> 56 CNTRLN OFFSET:
57 OBSTN CLNC SLOPE:
58 CLOSE-IN OBSTN:

DECLARED DISTANCES

> 60 TAKE OFF RUN AVBL (TORA):
> 61 TAKE OFF DIST AVBL (TODA):
> 62 ACLT STOP DIST AVBL (ASDA):
> 63 LNDG DIST AVBL (LDA):

(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

> 110 REMARKS:

- A 110-004 TWY C-2/C-3 EAST OF TWY C NOT AVBL TO ACR ACFT.
- A 110-005 FLIGHT CREWS SHOULD READ BACK ALL ADZY INFO PRVDD BY SNOW COMMAND.
- A 110-006 ARPT SFC COND UNMON BTN 0100 - 0400.
- A 110-007 USCG - PPR CTC TRAVERSE CITY FM 21 PRIMARY, 345.0 SECONDARY 15 MINS PRIOR TO ENTERING CG RAMP.
- A 110-008 PARASAILING OPNS 1.5 NM NORTHEAST OF ARPT FROM MEMORIAL DAY TO LABOR DAY 600 FT AGL FROM SR-SS DAILY.
- A 110-010 ALL ACFT CHRGD OVNGT RAMP PRKG FEE EXC MIL. ALL ACFT CHRGD LNDG FEE EXC PVT OWNED, SINGLE ENGINE ACFT.
- A 110-012 NO GENERAL AVN ACFT ON THE AIR CARRIER RAMP.

111 INSPECTOR: (F) 112 LAST INSP: 08/17/2021 113 LAST INFO RES:



> 1 ASSOC CITY: TRAVERSE CITY 4 STATE: MI LOC ID: TVC FAA SITE NR: 10379.*A
 > 2 AIRPORT NAME: CHERRY CAPITAL 5 COUNTY: GRAND TRAVERSE, MI
 3 CBD TO AIRPORT (NM): 2 S 6 REGION/ADO: AGL /DET 7 SECT AERO CHT: GREEN BAY

GENERAL

10 OWNERSHIP: PUBLIC
 > 11 OWNER: NORTHWEST RGNL AIRPORT AUTHORITY
 > 12 ADDRESS: 727 FLY DONT DR
 TRAVERSE CITY, MI 49686-3591
 > 13 PHONE NR: 231-947-2250
 > 14 MANAGER: KEVIN C KLEIN, AAE
 > 15 ADDRESS: 727 FLY DONT DR
 TRAVERSE CITY, MI 49686-3591

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 > 32 WIDTH:
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 > 34 SURF TREATMENT:
 35 GROSS WT: S
 36 (IN THSDS) D
 37 2D
 38 2D/2DS
 > 39 PCN / PCR:

LIGHTING/APCH AIDS

> 40 EDGE INTENSITY:
 > 42 RWY MARK TYPE-COND:
 > 43 VGS:
 44 THR CROSSING HGT:
 45 VISUAL GLIDE ANGLE:
 > 46 CNTRLN-TDZ:
 > 47 RVR-RVV:
 > 48 REIL:
 > 49 APCH LIGHTS:

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 > 51 DISPLACED THR:
 > 52 CTLG OBSTN:
 > 53 OBSTN MARKED/LGTD:
 > 54 HGT ABOVE RWY END:
 > 55 DIST FROM RWY END:
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 57 OBSTN CLNC SLOPE:
 58 CLOSE-IN OBSTN:

DECLARED DISTANCES

> 60 TAKE OFF RUN AVBL (TORA):
 > 61 TAKE OFF DIST AVBL (TODA):
 > 62 ACLT STOP DIST AVBL (ASDA):
 > 63 LNDG DIST AVBL (LDA):

(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

> 110 REMARKS:

A 110-013 FOR CD WHEN ATCT IS CLSD CTC FSS VIA RCO, IF UNA CTC MINNEAPOLIS ARTCC AT 651-463-5588.

111 INSPECTOR: (F) 112 LAST INSP: 08/17/2021 113 LAST INFO RES:

Appendix D

Project Site Photos

TVC EA ILS Site Photos
Photos Taken: 1/18/2023



Northeast Corner Taxiways C/D – Future ILS Antenna

TVC EA ILS Site Photos
Photos Taken: 1/18/2023



Northeast Corner Taxiways C/D – Future ILS Antenna

TVC EA ILS Site Photos
Photos Taken: 1/18/2023



Northeast Corner Taxiways C/D – Future Removal Portion of Taxiway C

TVC EA ILS Site Photos

Photos Taken: 1/18/2023



Northeast Corner Taxiways C/D – Future ILS Antenna

TVC EA ILS Site Photos
Photos Taken: 1/18/2023



Northeast Corner Taxiways C/D – Future ILS Antenna

TVC EA ILS Site Photos
Photos Taken: 1/18/2023



Northeast Corner Taxiways C/D – Future Removal Portion of Taxiway C

TVC EA ILS Site Photos
Photos Taken: 1/18/2023



Northwest Corner Taxiways C/D – Future Removal of Portion Taxiway C

TVC EA ILS Site Photos

Photos Taken: 1/18/2023



Northwest Corner Taxiways C/D – Future ILS Antenna

TVC EA ILS Site Photos
Photos Taken: 1/18/2023



Southeast Runway 28 Threshold – Future Localizer Shelter

TVC EA ILS Site Photos

Photos Taken: 1/18/2023



Southeast Runway 28 Threshold – Future Localizer

TVC EA ILS Site Photos
Photos Taken: 1/18/2023



East/Southeast Runway 28 Threshold – Future Localizer/Localizer Shelter

TVC EA ILS Site Photos
Photos Taken: 1/18/2023



Southeast Runway 28 Threshold – Future Localizer Shelter

TVC EA ILS Site Photos
Photos Taken: 1/18/2023



East/Southeast Runway 28 Threshold – Future Localizer/Localizer Shelter

TVC EA ILS Site Photos
Photos Taken: 1/18/2023



Southeast Runway 28 Threshold – Future Localizer Shelter

Appendix E

IPaC Report



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To:

April 17, 2023

Project code: 2023-0070014

Project Name: CHERRY CAPITAL AIRPORT (TVC) INSTALLATION OF INSTRUMENT LANDING SYSTEM (ILS) RUNWAY 10 EA

Subject: Verification letter for the project named 'CHERRY CAPITAL AIRPORT (TVC) INSTALLATION OF INSTRUMENT LANDING SYSTEM (ILS) RUNWAY 10 EA' for specified threatened and endangered species that may occur in your proposed project location consistent with the Michigan Endangered Species Determination Key (Michigan DKey)

Dear Brauna Hartzell:

The U.S. Fish and Wildlife Service (Service) received on **April 17, 2023** your effect determination(s) for the 'CHERRY CAPITAL AIRPORT (TVC) INSTALLATION OF INSTRUMENT LANDING SYSTEM (ILS) RUNWAY 10 EA' (the Action) using the Michigan DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance of the Service's Michigan DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Eastern Massasauga (=rattlesnake) (<i>Sistrurus catenatus</i>)	Threatened	NLAA
Monarch Butterfly (<i>Danaus plexippus</i>)	Candidate	No effect
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered	No effect
Pitcher's Thistle (<i>Cirsium pitcheri</i>)	Threatened	No effect
Red Knot (<i>Calidris canutus rufa</i>)	Threatened	No effect
Tricolored Bat (<i>Perimyotis subflavus</i>)	Proposed	No effect
	Endangered	

The Service will notify you within 30 calendar days if we determine that this proposed Action does not meet the criteria for a "may affect, not likely to adversely affect" (NLAA) determination for Federally listed species in Michigan. If we do not notify you within that timeframe, you may

proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the Michigan Ecological Services Field Office to apply local knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, the Michigan Ecological Services Field Office may request additional information to verify the effects determination reached through the Michigan DKey.

Your agency has met consultation requirements by informing the Service of your “No Effect” determination(s). No consultation is required for species that you determined will not be affected by the Action.

Please provide sufficient project details on your project homepage in IPaC (Define Project, Project Description) to support your conclusions and the Service’s 30-day review period. Failure to disclose important aspects of your project that would influence the outcome of your effects determinations may negate your determinations and invalidate this letter. If you have site-specific information that leads you to believe a different determination is more appropriate for your project than what the Dkey concludes, you can and should proceed based on the best available information.

The Service recommends that you contact the Service or re-evaluate the project in IPaC if: 1) the scope or location of the proposed Action is changed; 2) new information reveals that the action may affect listed species or designated critical habitat in a manner or to an extent not previously considered; 3) the Action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project changes are final or resources committed.

For non-Federal representatives: Please note that when a project requires consultation under section 7 of the Act, the Service must consult directly with the Federal action agency unless that agency formally designates a non-Federal representative (50 CFR 402.08). Non-Federal representatives may prepare analyses or conduct informal consultations; however, the ultimate responsibility for section 7 compliance under the Act remains with the Federal agency. If the Federal agency concurs with your determination, the project as proposed has completed section 7 consultation. All documents and supporting correspondence should be provided to the Federal agency for their records.

Bald and Golden Eagles:

Bald eagles, golden eagles, and their nests are protected under the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d) (Eagle Act). The Eagle Act prohibits, except when authorized by an Eagle Act permit, the “taking” of bald and golden eagles and defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” The Eagle Act’s implementing regulations define disturb as “...to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

If the Action may impact bald or golden eagles, additional coordination with the Service under the Eagle Act may be required. For more information on eagles and conducting activities in the vicinity of an eagle nest, please visit <https://www.fws.gov/library/collections/all-about-eagles>. In addition, the Service developed the National Bald Eagle Management Guidelines (May 2007) in order to assist landowners in avoiding the disturbance of bald eagles. The full Guidelines are available at <https://www.fws.gov/media/national-bald-eagle-management-guidelines-0>.

If you have further questions regarding potential impacts to eagles, please contact Chris Mensing, Chris_Mensing@fws.gov or 517-351-2555.

Monarch butterfly and other pollinators

In December 2020, after an extensive status assessment of the monarch butterfly, we determined that listing the monarch under the Endangered Species Act is warranted but precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. Therefore, the Service added the monarch butterfly to the candidate list. The Service will review its status each year until we are able to begin developing a proposal to list the monarch.

The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary.

For all projects, we recommend the following best management practices (BMPs) to benefit monarch and other pollinators.

Monarch and Pollinator BMP Recommendations

Consider monarch and other pollinators in your project planning when possible. Many pollinators are declining, including species that pollinate key agricultural crops and help maintain natural plant communities. Planting a diverse group of native plant species will help support the nutritional needs of Michigan's pollinators. We recommend a mix of flowering trees, shrubs, and herbaceous plants so that something is always blooming and pollen is available during the active periods of the pollinators, roughly early spring through fall (mid-March to mid-October). To benefit a wide variety of pollinators, choose a wide range of flowers with diverse colors, heights, structure, and flower shape. It is important to provide host plants for any known butterfly species at your site, including native milkweed for Monarch butterfly. Incorporating a water source (e.g., ephemeral pool or low area) and basking areas (rocks or bare ground) will provide additional resources for pollinators.

Many pollinators need a safe place to build their nests and overwinter. During spring and summer, leave some areas unmowed or minimize the impacts from mowing (e.g., decrease frequency, increase vegetation height). In fall, leave areas unraked and leave plant stems standing. Leave patches of bare soil for ground nesting pollinators.

Avoid or limit pesticide use. Pesticides can kill more than the target pest. Some pesticide residues can kill pollinators for several days after the pesticide is applied. Pesticides can also kill natural predators, which can lead to even worse pest problems.

Planting native wildflowers can also reduce the need to mow and water, improve bank stabilization by reducing erosion, and improve groundwater recharge and water quality.

Resources:

<https://www.fws.gov/initiative/monarchs>

<https://www.fws.gov/library/collections/pollinators>

Wetland impacts:

Section 404 of the Clean Water Act of 1977 (CWA) regulates the discharge of dredged or fill material into waters (including wetlands) of the United States. Regulations require that activities permitted under the CWA (including wetland permits issued by the Michigan Department of Environment, Great Lakes, and Energy (EGLE)) not jeopardize the continued existence of species listed as endangered or threatened. Permits issued by the U.S. Army Corps of Engineers must also consider effects to listed species pursuant to section 7 of the Endangered Species Act. The Service provides comments to the agencies that may include permit conditions to help avoid or minimize impacts to wildlife resources including listed species. For this project, we consider the conservation measures you agreed to in the determination key and/or as part of your proposed action to be non-discretionary. If you apply for a wetland permit, these conservation measures should be explicitly incorporated as permit conditions. Include a copy of this letter in your wetland permit application to streamline the threatened and endangered species review process.

Summary of conservation measures for your project You agreed to the following conservation measures to avoid adverse effects to listed species and our concurrence is only valid if the measures are fully implemented. These must be included as permit conditions if a permit is required and/or included in any contract language.

Eastern massasauga

Materials used for erosion control and site restoration must be wildlife-friendly. Do not use erosion control products containing plastic mesh netting or other similar material that could entangle eastern massasauga rattlesnake (EMR). Several products for soil erosion and control exist that do not contain plastic netting including net-less erosion control blankets (for example, made of excelsior), loose mulch, hydraulic mulch, soil binders, unreinforced silt fences, and straw bales. Others are made from natural fibers (such as jute) and loosely woven together in a manner that allows wildlife to wiggle free.

To increase human safety and awareness of EMR, those implementing the project must first review the EMR factsheet (available at <https://www.fws.gov/media/eastern-massasauga-rattlesnake-fact-sheet>), and watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/~PFnXe_e02w).

During project implementation, report sightings of any federally listed species, including EMR, to the Service within 24 hours.

The project will not result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of EMR upland habitat (uplands associated with high quality wetland habitat) to other land uses.

The project will occur entirely within the EMR active season (April 15 through October 15 in the southern Lower Peninsula; in the northern Lower Peninsula May 1 through October 1).

The action will not include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s).

The action will not include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s).

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

CHERRY CAPITAL AIRPORT (TVC) INSTALLATION OF INSTRUMENT LANDING SYSTEM (ILS) RUNWAY 10 EA

2. Description

The following description was provided for the project 'CHERRY CAPITAL AIRPORT (TVC) INSTALLATION OF INSTRUMENT LANDING SYSTEM (ILS) RUNWAY 10 EA':

The proposed project would consist of a localizer, localizer shelter, and an ILS antenna. The ILS antenna will be installed on the airfield, at the southwest intersection of Taxiway C and Taxiway D, north of Runway 10/28. Installation of the ILS antenna requires that a 260' section of Taxiway C is removed between Taxiway D and Runway 10/28 in order to accommodate the specific site for the antenna. The future localizer shelter will be installed adjacent to the existing medium-intensity approach lighting system - MALSR - shelter, off the end of Runway 28.

The existing area for the installation of the ILS antenna consists of maintained turf grass at the intersection of Taxiways C and D. The existing area for the proposed localizer shelter is also maintained turf grass, located adjacent to the existing MALSR shelter. According to historical as-built drawings, the proposed project areas have been disturbed and graded since at least 1966.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@44.7418736,-85.58606265,14z>



QUALIFICATION INTERVIEW

1. Are there any possible effects to any listed species or to designated critical habitat from your project or effects from any other actions or projects subsequently made possible by your project?

Select "Yes" even if the expected effects to the species or critical habitat are expected to be 1) extremely unlikely (discountable), 2) can't meaningfully be measured, detected, or evaluated (insignificant), or 3) wholly beneficial.

Select "No" to confirm that the project details and supporting information allow you to conclude that listed species and their habitats will not be exposed to any effects (including discountable, insignificant, or beneficial effects) and therefore, you have made a "no effect" determination for all species. If you are unsure, select YES to answer additional questions about your project.

Yes

2. This determination key is intended to assist the user in the evaluating the effects of their actions on Federally listed species in Michigan. It does not cover other prohibited activities under the Endangered Species Act (e.g., for wildlife: import/export, Interstate or foreign commerce, possession of illegally taken wildlife, purposeful take for scientific purposes or to enhance the survival of a species, etc.; for plants: import/export, reduce to possession, malicious destruction on Federal lands, commercial sale, etc.) or other statutes. Click yes to acknowledge that you must consider other prohibitions of the ESA or other statutes outside of this determination key.

Yes

3. Is the action the approval of a long-term (i.e., in effect greater than 10 years) permit, plan, or other action? (e.g., a new or re-issued hydropower license, a land management plan, or other kinds of documents that provide direction for projects or actions that may be conducted over a long term (>10 years) without the need for additional section 7 consultation).

No

4. Is the action being funded, authorized, or carried out by a Federal agency?

Yes

5. Does the action involve the installation or operation of wind turbines?

No

6. Are there at least 30 days prior to your action occurring? Endangered species consultation must be completed before taking any action that may have effects to listed species. The Service also needs 30 days to review projects before we can verify conclusions in some dkey output letters. For example, if you have already started some components of the project on the ground (e.g., removed vegetation) before completing this key, answer “no” to this question. The only exception is if you have a Michigan Field Office pre-approved emergence survey (i.e., if you have conducted pre-approved emergence surveys for listed bats before tree removal, you can still answer yes to this question).

Yes

7. Does the action involve constructing a new communication tower or modifying an existing communications tower?

No

8. Does the activity involve aerial or other large-scale application of any chemical (including insecticide, herbicide, etc.)?

No

9. Does your project include water withdrawal (ground or surface water) greater than 10,000 gallons/day?

No

10. Will your action permanently affect hydrology?

No

11. Will your action temporarily affect hydrology?

No

12. Will your project have any direct impacts to a stream or river (e.g., Horizontal Directional Drilling (HDD), hydrostatic testing, stream/road crossings, new storm-water outfall discharge, dams, other in-stream work, etc.)?

No

13. Does your project have the potential to indirectly impact the stream/river or the riparian zone (e.g., cut and fill, horizontal directional drilling, hydrostatic testing, construction, vegetation removal, discharge, etc.)?

No

14. Will your action disturb the ground or existing vegetation? This includes any off road vehicle access, soil compaction, digging, seismic survey, directional drilling, heavy equipment, grading, trenching, placement of fill, pesticide application, vegetation management (including removal or maintenance using equipment or chemicals), cultivation, development, etc.

Yes

15. Is the action a utility-scale solar development project?

No

16. [Hidden semantic] Does the action intersect the MOBU AOI?

Automatically answered

Yes

17. Under the ESA, monarchs remain warranted but precluded by listing actions of higher priority. The monarch is a candidate for listing at this time. The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary. If your project will have no effect on monarch butterflies (for example, if your project won't affect their habitat or individuals), then you can make a "no effect" determination for this project. Are you making a "no effect" determination for monarch?

Yes

18. [Hidden Semantic] Does the action intersect the Eastern massasauga rattlesnake area of influence?

Automatically answered

Yes

19. Does your action involve prescribed fire?

No

20. Will this action occur entirely in the Eastern massasauga rattlesnake inactive season (October 2 through April 30)?

No

21. Will this action occur entirely in the Eastern massasauga rattlesnake active season (May 1 through October 1)?

Yes

22. Will the action result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of uplands of potential Eastern massasauga rattlesnake habitat (uplands associated with high quality wetland habitat) to other land uses?

No

23. Will you use [wildlife safe materials](#) for erosion control and site restoration and eliminate the use of erosion control products containing plastic mesh netting or other similar material that could ensnare Eastern massasauga rattlesnake?

Yes

24. Will you watch MDNR's ["60-Second Snakes: The Eastern Massasauga Rattlesnake \(EMR\)"](#) video, review the [EMR factsheet](#) or call 517-351-2555 to increase human safety and awareness of EMR?

Yes

25. Will all action personnel report any Eastern massasauga rattlesnake observations, or observation of any other listed threatened or endangered species, during action implementation to the Service within 24 hours?
Yes
26. [Hidden Semantic] Does the action area intersect the rufa red knot area of influence?
Automatically answered
Yes
27. [Hidden Semantic] Does the action area intersect the area of influence for Pitcher's thistle?
Automatically answered
Yes
28. The project has the potential to affect federally listed bats. Does the action area contain any known or potential bat hibernacula (natural caves, abandoned mines, or underground quarries)?
No
29. Has a presence/absence bat survey or field-based habitat assessment following the Service's Range-wide [Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines](#) been conducted within the action area?
No
30. Does the action involve removal/modification of a human structure (barn, house or other building) known to contain roosting bats?
No
31. Does the action include removal/modification of an existing bridge or culvert?
No
32. Does the action include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s)?
No
33. Does the action include one or more of the following: (1) tree cutting/trimming, (2) prescribed fire, (3) pesticide (including insecticide and/or rodenticide), and/or (4) herbicide/fungicide application?
No
34. [Hidden Semantic] Does this project intersect the northern long-eared bat area of influence?
Automatically answered
Yes
35. [Hidden semantic] Does the action intersect the Tricolored bat AOI/SLA/range?
Automatically answered
Yes
-

36. The tricolored bat was proposed for listing as endangered on September 13, 2022. In Michigan, the tricolored bat was rare pre-white nose syndrome (WNS) and is exceedingly rare post-WNS. The species has been observed in 12 Michigan counties to date, largely during the fall or winter. With very few exceptions, the species has not been observed in Michigan in the summer months, and no maternity colonies have been found. During winter, tricolored bats hibernate in caves, abandoned mines, and abandoned tunnels ranging from small to large in size. During spring, summer and fall months, they roost primarily among leaf clusters of live or recently dead deciduous/hardwood trees.

Are you making a no effect determination on this project for the tricolored bat?

Yes

IPAC USER CONTACT INFORMATION

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LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Aviation Administration

General Project Design Guidelines (2 Species)

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Species Document Availability

Species with general design guidelines

Eastern Massasauga (=rattlesnake) *Sistrurus catenatus*

Northern Long-eared Bat *Myotis septentrionalis*

Species without general design guidelines available

Monarch Butterfly *Danaus plexippus*

Pitcher's Thistle *Cirsium pitcheri*

Red Knot *Calidris canutus rufa*

Tricolored Bat *Perimyotis subflavus*

General Project Design Guidelines - Tricolored Bat and 5 more species

Published by Michigan Ecological Services Field Office for the following species included in your project

Tricolored Bat *Perimyotis subflavus*

Pitcher's Thistle *Cirsium pitcheri*

Red Knot *Calidris canutus rufa*

Monarch Butterfly *Danaus plexippus*

Eastern Massasauga (=rattlesnake) *Sistrurus catenatus*

Northern Long-eared Bat *Myotis septentrionalis*

Environmental Screening for Eastern Massasauga Rattlesnake in Michigan March 14, 2017

Background

The Eastern Massasauga Rattlesnake (EMR) is listed as a threatened species under the U.S. Endangered Species Act (Act). The Act protects the EMR and their habitat by prohibiting “take” and may require agencies to coordinate with the U.S. Fish and Wildlife Service (Service) before authorizing or funding an activity affecting the species. To streamline coordination, the Service’s Michigan Ecological Services Field Office has developed a set of Best Management Practices (BMPs) for specific activities potentially impacting EMR in Michigan. These BMPs are voluntary and just one of the ways that compliance with the Act may be achieved.

Projects may...

- have no effect to EMR and no need for additional ESA compliance considerations.
- have potential for adverse effects, but use BMPs to avoid adverse effects (i.e., “not likely to adversely affect” EMR) or minimize the adverse effects.
- use surveys to confirm probable absence of EMR (contact the Service for survey guidance).
- use “Informal Consultation” with Service (for actions requiring a Federal permit or funding).
- use “Formal Consultation” with Service (for actions requiring a Federal permit or funding).
- develop a Habitat Conservation Plan and seek an ESA permit, if adverse effects cannot be avoided.

For activities not listed in the BMPs, please contact the Service for project-specific recommendations. In some cases implementation of BMPs may not be sufficient to avoid all adverse impacts to EMR and additional consultation with the Service may be required. The Service can assist planners in determining whether adverse effects are likely as a result of proposed projects, and whether implementation of BMPs is sufficient to remove the risk of adverse effects.

Additional information on compliance with the Act can be found:

For Federal actions/section 7 consultation:

<https://www.fws.gov/midwest/Endangered/section7/s7process/index.html>

For non-Federal actions:

<https://www.fws.gov/midwest/endangered/permits/index.html>

For questions or comments you may contact the Service below:

U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823
Phone: (517)351-2555
Email: eastlansing@fws.gov

Definitions

Active Season: The active season begins in the spring when snakes emerge from hibernation, generally when maximum air temperatures are above 50°F, and ends in the fall when EMR have returned to their hibernacula and temperatures are consistently below 45°F. In Michigan, the active season is generally April through October. The active season dates will vary by location and weather. **Contact the Service for project-specific dates based on location when work in EMR habitat is planned near the start or end of the active season.**

Affecting hydrology: We consider “affecting hydrology” to include projects that are likely to appreciably change the elevations of surface water upstream or downstream, or in the local ground water (as estimated pre-project vs. post-project). The concern is for changes to local hydrology (e.g., creating new ditches, creating a new impoundment) that might harm EMR hibernating at or near ground water, or actions that significantly alter available suitable habitat either through flooding or drying of EMR wetlands.

Hibernacula: Areas suitable for EMR to overwinter. For most EMR populations, the locations of hibernacula are not known, but these areas are critical to protect. Unfortunately, we lack information on how to reliably identify these areas. EMR usually hibernate below the frost line in crayfish or small mammal burrows, tree root networks or rock crevices in or along the edge of wetlands or in adjacent upland areas with presumably high water tables (areas where the soil is saturated but not inundated). Following egress from hibernacula in the spring, EMR typically remain aboveground in the vicinity for a week or two, and return to these areas in the fall for several weeks prior to entering hibernation. Surveys in the spring (shortly following egress) or fall (prior to ingress) when snakes are congregating in the vicinity may help identify these important areas. Maintaining stable hydrology of these areas is important during the inactive season.

IPaC: “Information for Planning and Conservation” is a project planning tool available on-line to the public that streamlines the Service’s environmental review process.

EMR Habitat: “Eastern Massasaugas have been found in a variety of wetland habitats. Populations in southern Michigan are typically associated with open wetlands, particularly prairie fens, while those in northern Michigan are known from open wetlands and lowland coniferous forests, such as cedar swamps. Some populations of Eastern Massasaugas also utilize open uplands and/or forest openings for foraging, basking, gestation and parturition (i.e., giving birth to young). Massasauga habitats generally appear to be characterized by the following: (1) open, sunny areas intermixed with shaded areas, presumably for thermoregulation; (2) presence of the water table near the surface for hibernation; and (3) variable elevations between adjoining lowland and upland habitats.” From Michigan Natural Features Inventory (Website: mnfi.anr.msu.edu)

Tier 1 Habitat: Areas known to be occupied by EMR or highly likely to be occupied by EMR.

Tier 2 Habitat: Areas with high potential habitat and may be occupied by EMR.

Within the known range: EMR can occur throughout the Lower Peninsula and on Bois Blanc Island in Mackinac County. Areas within the known range but outside of Tier 1 and Tier 2 are considered less likely to be occupied. EMR is highly secretive and cryptic in nature, and can persist in low densities, which makes them difficult to detect. Further, there are extensive areas of the state that have never been surveyed. It is likely that there are additional and yet-unknown occurrences throughout the Lower Peninsula of Michigan. Mapped habitats are subject to change based on new information identifying current Tier 1 and 2 areas as unsuitable, or based on discovery of new EMR occurrences.

EMR Environmental Screening Step-wise Process

Step 1. Determine if EMR may be present in the action area

- ✓ Determine whether the project is in potential EMR habitat using <https://ecos.fws.gov/ipac>
 - You can search for your project location and define the action area by drawing a polygon or uploading a shapefile.
 - IPaC will give you a list of species that may be present in the area you identified. If you click on the thumbnail for EMR, it will tell you if your project is within Tier 1 or Tier 2 habitat, or within the known range of EMR. If EMR is not listed, you do not need to consider this species. Effects to other listed species should also be considered; contact the Service if you need assistance.
 - If EMR is listed, it does not necessarily mean that the entire action area is potential habitat, only that some potential habitat is within the action area entered. For large-scale (e.g., county-wide or multi-county projects) consider coordinating the Michigan Ecological Services Field Office for direct assistance.

If your project is within the known range of EMR, including Tier 1 or Tier 2 habitat, continue to step 2:

Step 2. Determine if the project has the potential to affect EMR

Projects have no effect on EMR when...

- ✓ There is no suitable EMR habitat in the project area and no potential impact off-site (e.g., water discharge into adjacent EMR habitat). If project site conditions are determined to be wholly unsuitable for EMR (e.g., project is in regularly mowed turf grass, row crop, graveled lot, existing building, or industrial site), it is not suitable EMR habitat.
- ✓ The project occurs within suitable habitat, but the action will have absolutely no effect on the habitat or EMR.
- ✓ In suitable EMR habitat, but the site is entirely unoccupied by the species. This is typically confirmed through surveys (contact the Service for more information). In some cases it may be easier to assume EMR are present and use BMPs than to conduct surveys for the species.

For projects where there is a potential for effects to EMR, continue to the section of the document as follows:

For Tier 1 Habitat Page 5

For Tier 2 Habitat Page 6

Within the range of EMR Page 7

For projects with a combination of Tier 1 and Tier 2 habitat, follow the instructions for Tier 1.

Tier 1 Habitat

Tier 1: Project will not affect EMR if all of the following apply:

1. Project will not result in any changes to suitable EMR habitat quality, quantity, availability or distribution, including changes to local hydrology
2. If EMR are present in the project area, they are not likely to have any response as a result of exposure to the action or any environmental changes as a result of the action
3. Project includes all General Best Management Practices:
 - a. Use wildlife-safe materials for erosion control and site restoration (see Erosion Control Resources side panel). In Tier 1 habitat, immediately eliminate use of erosion control products containing plastic mesh netting or other similar material that could entangle EMR.
 - b. To increase human safety and awareness of EMR, those implementing the project should first watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/-PFnXe_e02w), or review the EMR factsheet (available at <https://www.fws.gov/midwest/endangered/reptiles/eam/pdf/EMRfactsheetSept2016.pdf> or by calling 517-351-2555.
 - c. Require reporting of any EMR observations, or observation of any other listed threatened or endangered species, during project implementation to the Service within 24 hours.

Tier 1: Project Not Affecting EMR Coordination

Recommendation: No pre-project coordination with Service needed. Document the steps above for your records.

Tier 1: All Other Projects: For any other projects in Tier 1 habitat that may affect EMR or its habitat, contact the Service for assistance in evaluating potential impacts. Best Management Practices (starting on page 8) are included for many actions to help with project planning, but may not be sufficient to avoid all adverse impacts. The Service can determine whether additional measures are necessary after a project-specific review.

Erosion Control Resources

There are a variety of products that can be used for soil erosion and control requirements. These products may incorporate plastic mesh netting to help maintain form and function. This plastic netting has been demonstrated to entangle a wide variety of wildlife from birds to small mammals. In Michigan, soil erosion control netting has resulted in the documented mortality of a number of imperiled amphibian and reptile species including the EMR and the Eastern Fox Snake (State Threatened).

Several products for soil erosion and control exist that do not contain plastic netting including net-less erosion control blankets (for example, made of excelsior), loose mulch, hydraulic mulch, soil binders, unreinforced silt fences, and straw bales. Others are made from natural fibers (such as jute) and loosely woven together in a manner that allows wildlife to wiggle free. For more information regarding wildlife-safe erosion control measures contact the [USFWS Michigan Ecological Services Field Office](#).

Tier 2 Habitat

Tier 2: Project is not likely to adversely affect EMR if all of the following apply:

1. Project does not impact more than 1 acre of wetland habitat and includes all applicable activity-specific BMPs (starting on page 8), and
2. Project will not appreciably affect hydrology
3. Project includes all General Best Management Practices:
 - a. Use wildlife-safe materials for erosion control and site restoration (See Erosion Control Resources side panel, page 4). In Tier 2 habitat, eliminate the use of erosion control products containing plastic mesh netting or other similar material that could ensnare EMR as soon as is feasible but no later than January 1, 2018.
 - b. To increase human safety and awareness of EMR, those implementing the project should first watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/-PFnXe_e02w), or review the EMR factsheet (available at <https://www.fws.gov/midwest/endangered/reptiles/eama/pdf/EMRfactsheetSept2016.pdf> or by calling 517-351-2555.
 - c. Require reporting of any EMR observations, or observation of any other listed threatened or endangered species, during project implementation to the Service within 24 hours.

Tier 2: Project Not Likely to Adversely Affect EMR Coordination Recommendation: Informal consultation with Service for actions requiring a Federal permit or funding. For non-Federal projects, document the steps above for your records, but no pre-project coordination with the Service needed.

Tier 2: All Other Projects: Coordinate with the Service for a project-level review to determine potential impacts and whether additional conservation measures are needed to avoid adverse effects.

Within the known range of EMR

For projects within the known range of EMR, but outside of Tier 1 and Tier 2 habitat:

To help ensure your project is unlikely to affect EMR:

1. Project applies the General Best Management Practices:
 - a. Use wildlife-safe materials for erosion control and site restoration (See Erosion Control Resources side panel, page 4). By January 1, 2019, eliminate the use of erosion control products containing plastic mesh netting or other similar material that could ensnare EMR (within the known range but outside of Tier1 or Tier 2 habitat).
 - b. To increase human safety and awareness of EMR, those implementing the project should first watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/-PFnXe_e02w), or review the EMR factsheet (available at <https://www.fws.gov/midwest/endangered/reptiles/eama/pdf/EMRfactsheetSept2016.pdf> or by calling 517-351-2555).
 - c. Require reporting of any EMR observations, or observation of any other listed threatened or endangered species, during project implementation to the Service within 24 hours.
2. Project will not have significant impacts to dispersal, connectivity, or hydrology of existing EMR potential habitat, i.e., filling less than 1 acre of wetland habitat or converting less than 20 acres of uplands of potential EMR habitat (uplands associated with high quality wetland habitat) to other land uses.

Within the Known Range, but Outside Tier 1 or 2 Coordination Recommendation:

Document the steps above for your records and no pre-project coordination with the Service needed. If you cannot implement the General Best Management Practices contact the Service for assistance in evaluating potential impacts.

Activity-Specific Best Management Practices

For Tier 1, BMPs are included; however, even with implementation of the BMPs, project-specific review may be needed to determine whether they are sufficient to avoid all adverse impacts

- In Tier 1 habitat, contact the Service regarding the potential applicability of surveys to determine EMR absence in suitable habitat. In Tier 2, surveys can be conducted to confirm the presence of suitable habitat and/or the presence/probable absence of EMR. If onsite habitat is determined to be wholly unsuitable via desktop analysis (e.g., entirely mowed lawn, row crop, graveled lot, and industrial site), then it can be classified as unoccupied and the BMPs will not be necessary.
- Minimize work in Tier 1 and Tier 2 EMR habitat. When feasible, do not route new construction projects, such as pipelines, facilities, or access roads, through potential EMR habitat. Implement the use of wildlife-friendly corridors (e.g., oversized culverts) into new road design to maintain or enhance habitat connectivity.
- Projects should be designed to minimize the potential for disturbance to EMR during project activities.

Maintenance Activities (includes nominal modifications to existing roads and infrastructure)

1. Ground Disturbing Activities

a. All

- i. No known EMR hibernacula are destroyed or disturbed at any time of year. Because these areas are often not known:
 1. For Tier 1: contact the Service to determine whether adverse impacts are likely as a result of ground disturbing work in Tier 1 habitat.
 2. For Tier 2: when operating in potential hibernation areas (e.g., EMR wetlands and adjacent areas with crayfish burrows, rodent holes, small mammal burrows, etc.), work is conducted well within the active season (June – August) to avoid when snakes are likely to be present. During this time, they are most likely to be able to move out of the way of disturbance and have greater chances to find alternative hibernation sites. Destroying potential hibernacula may still impact snakes indirectly. Potential hibernation areas should be avoided to the extent possible.

b. Grading

- i. When working during EMR active season, use exclusionary fencing to separate EMR habitat from the work site to prevent EMR from accessing the disturbance area. For example, in linear projects exclusionary fencing should run parallel to the disturbance, creating a barrier to snake movement. Each end of the exclusionary fencing should be angled away from the area of disturbance to direct snakes traveling along fencing away from the site. The

- exclusionary fencing will typically be traditional silt fence that is set up outside of all areas of disturbance and other types of fencing (i.e., snow fence used to delineate the work zone). Do not use fencing materials that can entangle or injure snakes.
- ii. Any areas using exclusionary fencing should first be “cleared” by a qualified individual¹ before beginning construction activities. Fencing should be installed a minimum of 1 day before construction activities occur and walked weekly to ensure the integrity of the fence. If snakes are seen within the work zone, activity should stop until the snake can be safely moved, and the fence examined for breeches.
 - iii. Revegetate all disturbed Tier 1 and Tier 2 habitat with appropriate plant species (i.e., native species or other suitable non-invasive species present on site prior to disturbance). Monitor all restoration plantings for proper establishment and implement supplemental plantings as necessary to ensure restorations are of equal to or better habitat quality than previous conditions.
 - iv. In Tier 1 and Tier 2, avoid spread of invasive species into EMR habitat by following best practices. This includes inspecting and cleaning equipment and vehicles between work sites as needed to avoid the spread of invasive plant materials.
- c. Trenching
- i. In Tier 1 and Tier 2, avoid trenching in EMR wetlands when possible. In Tier 1, if open trenching is required install exclusionary fencing (follow measures 1(b)(i)-(iv)) and ensure the area is clear prior to trenching.
- d. Fill
- i. In Tier 1 and Tier 2, ensure all imported fill material is free from contaminants or invasive species could affect the species or habitat through acquisition of materials at an appropriate quarry or other such measures.
 - ii. In Tier 1 and Tier 2, use exclusionary fencing around the area to be filled and have the site “cleared” prior to placing fill by a qualified individual (as in 1(b)(i)-(ii)).
- e. Ditching
- i. For Tier 1 and Tier 2, conduct work well within the active season (June-August) when snakes are not likely to be near hibernation sites and can escape disturbance, or contact Service for project specific recommendations.
 - ii. For Tier 1, use exclusionary fencing around the area to be cleared/graded and have the site cleared by a qualified individual prior to construction activities.
 - iii. For Tier 1, contact the Service for work greater than 200’ for project specific recommendations.

¹ A qualified individual is someone who has received training on the identification and life history of EMR.

2. Site Access with vehicles (both Tiers)
 - a. Limit operating vehicles/equipment, clearing trees, etc., in EMR habitat to the inactive season when the ground is frozen. During this time, under these conditions, EMR are most likely underground and will not be impacted by these activities. When possible, use low-impact equipment such as light weight track mounted vehicles with low ground pressure. In Tier 1, if the ground isn't completely frozen (due to weather conditions during the inactive season or if working near seeps and springs that are less likely to freeze), or if working near potential hibernacula, manual access (on foot) may be required.
 - b. Strictly control and minimize vehicle activity in known/presumed occupied EMR habitat to the extent possible. During EMR active season, speed limits at facilities and access roads (i.e., 2-track and gravel) in occupied habitat should be <15 MPH.
 - c. In Tier 1 and Tier 2 habitat areas, drivers should be aware of the potential danger to the driver of swerving to intentionally drive over snakes as well as legal and conservation implications.

3. Heavy Equipment (both Tiers)
 - a. Spill Prevention for oils/fluids
 - i. Site staging areas for equipment, fuel, materials, and personnel at least 100 feet from the waterway, if available, to reduce the potential for sediment and hazardous spills entering the waterway. If sufficient space is not available, a shorter distance can be used with additional control measures (e.g., redundant spill containment structures, on-site staging of spill containment/clean-up equipment and materials). If a reportable spill has impacted occupied habitat:
 1. Follow spill response plan;
 2. Call MDEQ and the National Response Center (800-424-8802), and the Service's Michigan Ecological Services Field Office (517-351-2555) to report the release.
 - b. Do not use large equipment or perform earth-moving activities, water withdrawal and discharge for hydrostatic testing, or other activities that substantially affect the ground or water levels in potential EMR hibernacula areas. Avoidance measures may include, but are not limited to, re-routing of pipeline and appurtenance facilities, boring or drilling, and timing/weather-related restrictions. Measures will be determined on a site-specific basis, based on local habitat conditions, contact Service for more information.

4. Hydrology impacts (both Tiers)
 - i. Water levels in known/presumed occupied habitats should not be artificially manipulated during the inactive season.

- ii. Where applicable, water levels should be allowed to flow naturally and not be artificially stabilized. This allows for the restoration of early successional habitats.

Habitat Management and Restoration

5. Vegetation Management

a. Mowing

- i. In Tier 1, mow during the inactive season.
- ii. For Tier 2, mowing is unrestricted during the inactive season. During the active season, follow daytime mowing restrictions and mow during times of day when snakes are less likely to be active (Figure 1). Increase mower deck height to >8 inches to reduce likelihood of injury to snakes. Higher deck height will reduce the risk of death or injury to snakes in the area.
- iii. In areas with turf grass or areas where trying to discourage EMR (e.g., in areas around buildings), mow regularly and keep grass relatively short (less than 4-6 inches) to reduce its suitability for EMR. If starting with longer grass (greater than 6 inches), mow during the inactive season initially, and then maintenance mowing can occur during the active season (as long as it is regularly maintained and kept shorter than 4-6 inches, so that EMR is unlikely to use those areas). Unmaintained/longer grass may be used by snakes and make them vulnerable to mortality during the next mowing event.

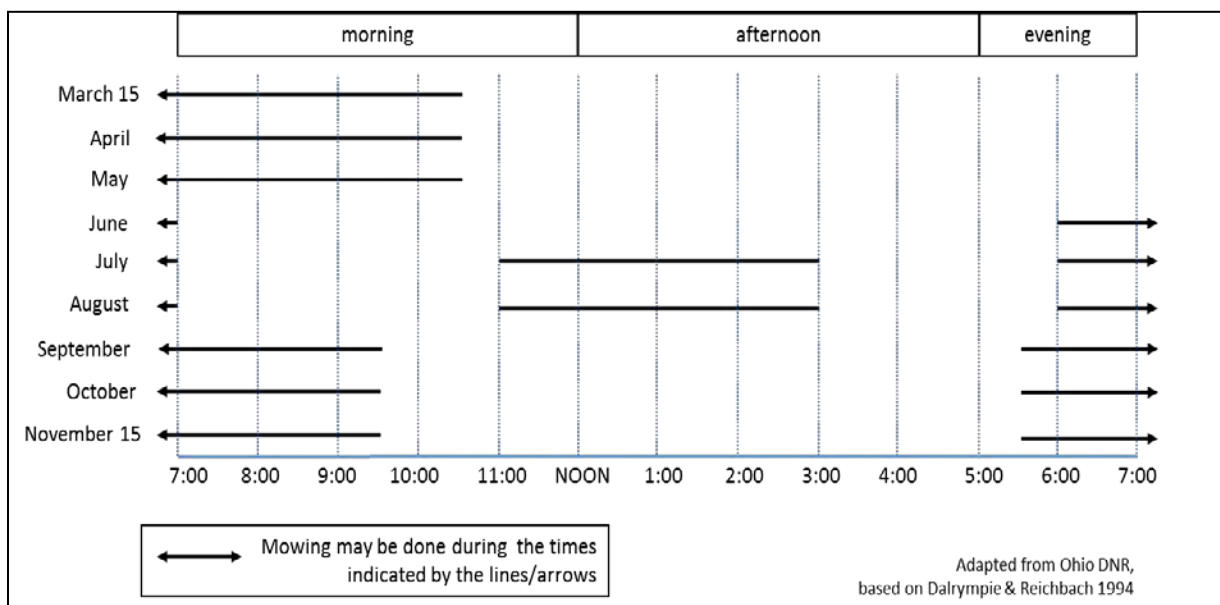


Figure 1. EMR Active season mowing schedule (NiSource Biological Opinion, page 273, USFWS 2015)

- b. Cultivation (e.g., disking)
 - i. In Tier 1 habitat, disking should be limited to the inactive season, and areas within 50 m of known or potential hibernacula should be avoided. In Tier 2, disking can occur in the active season if area is mowed during the inactive season and maintained shorter than 4-5 inches.
- c. Brush/Tree Removal
 - i. In Tier 1, conduct brush or tree removal in known/presumed EMR habitat during the inactive season, when the ground is frozen (such that soils can be left undisturbed).
 - ii. Use low impact harvest methods in Tier 1 and Tier 2 wetlands to cut and remove individual trees. This includes using low-impact equipment such as light weight track mounted vehicles with low ground pressure. In Tier 1, if the ground isn't completely frozen (due to weather conditions during the inactive season or if working near seeps and springs that are less likely to freeze), or if working near potential hibernacula, use hand tools and access site on foot.
 - iii. In Tier 1 and Tier 2, do not burn brush piles during the active season. Dispose of brush offsite or leave in place.
- d. Herbicides
 - i. Follow all appropriate label instructions regarding which herbicide formulation to use in potential EMR habitat. Avoid spray drift beyond the target species/area (observing label instructions regarding optimal wind speed and direction, boom height, droplet size calibration, precipitation forecast, etc.).
 - ii. Avoid broadcast applications of herbicides in Tier 1. Spot spraying or wicking can be used to control invasive plants in occupied habitat. If using broadcast spray in Tier 2, limit the area of exposure to less than half of the available EMR habitat to allow for untreated areas to provide potential areas of refugia from exposure. Contact the Service if you need help in determining this.
- e. Prescribed burning (Tier 1 and Tier 2)
 - i. Conduct prescribed burns during the inactive season before snakes emerge from hibernation. Walk the burn unit following the burn and report any dead or injured EMR to the Service within 24 hours. Burn only a portion (e.g., one-third) of available EMR habitat in any year to leave suitable cover for EMR and its prey.
 - ii. Establish fire breaks using existing fuel breaks (roads, rivers, trails, etc.) to the greatest extent possible. Cultivation (disking or roto-tilling) of burn breaks will be minimized to the extent that human health and safety are not jeopardized. Cultivation and mowing to establish fire breaks will occur during the inactive season.

6. Erosion control
 - a. Use wildlife-safe erosion control blankets (without plastic mesh netting in the layers of material) as required in the general BMPs. Remove all silt fence used for erosion control once soils are stable to reduce barriers to EMR movement.
7. Revegetation
 - a. Revegetate all disturbed Tier 1 and Tier 2 habitat with appropriate plant species (i.e., native species or other suitable non-invasive species present on site prior to disturbance). Monitor all restoration plantings for proper establishment and implement supplemental plantings as necessary to ensure restorations are of equal to or better habitat quality than previous conditions.
8. Invasive species
 - a. In Tier 1 and Tier 2, avoid spread of invasive species into EMR habitat by following best practices. This includes inspecting and cleaning equipment and vehicles between work sites as needed to avoid the spread of invasive plant materials.
9. Wetland restoration
 - a. Restoring natural hydrology in areas that have been drained by tiling and ditching may greatly benefit EMR habitat. Conduct tile breaking or excavation well within the active season to avoid potential hibernacula. Have a qualified individual walk in front of the equipment to clear the area. Work with the Service for Tier 1 habitat to ensure no indirect adverse effects are expected as a result of restoration efforts.
10. Water-level manipulation
 - a. Water levels should not be artificially manipulated during the inactive season to avoid impacts to hibernating snakes. Contact the Service in Tier 1 habitat when water levels will be manipulated during the inactive season or will result in significant alterations to EMR habitat during the active season.

General Project Design Guidelines - Tricolored Bat and 5 more species

Published by Michigan Ecological Services Field Office - Publication Date: June 10, 2022 for the following species included in your project

Tricolored Bat *Perimyotis subflavus*

Pitcher's Thistle *Cirsium pitcheri*

Red Knot *Calidris canutus rufa*

Monarch Butterfly *Danaus plexippus*

Eastern Massasauga (=rattlesnake) *Sistrurus catenatus*

Northern Long-eared Bat *Myotis septentrionalis*

Northern Long-eared Bat Project Review in Michigan

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I. BACKGROUND INFORMATION

The northern long-eared bat (NLEB) is one of the species of bats most impacted by the disease white-nose syndrome (WNS). Due to declines caused by WNS and continued spread of the disease, the NLEB was listed as threatened under the Endangered Species Act (ESA) on April 2, 2015. The U.S. Fish and Wildlife Service (Service or USFWS) also developed a final 4(d) rule, which specifically defines “take” prohibitions for the species, which published in the *Federal Register* on January 14, 2016.

On March 23, 2022, the Service published a proposal to reclassify the NLEB as endangered under the Endangered Species Act. Following a court order by the U.S. District Court for the District of Columbia, the Service must complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species.

For more information on NLEB, including the current 4(d) rule and new listing proposal, visit the [USFWS NLEB page](#).

NLEB in Michigan

The NLEB is documented in many Michigan counties and is believed to range throughout the entire state. Therefore, unless presence/absence surveys conducted in accordance with [Service Guidelines](#) indicate the probable absence of the species, NLEB are considered potentially present wherever suitable habitat exists within the state.

Suitable Habitat for NLEB:

During the winter, NLEB hibernate in mines, caves, or similar structures. Many NLEB hibernacula have been documented in Michigan; however, our knowledge of these overwintering areas throughout the state is likely incomplete. Suitable summer habitat for NLEB consists of a wide variety of forested habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats, such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roost trees (i.e., live trees and/or snags ≥ 3 inches DBH that have exfoliating bark, cracks/crevices, and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure.

Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1,000 feet of other forested/wooded habitat. NLEB have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat boxes; therefore, these structures should also be considered potential summer habitat. Suitable bridges and culverts include those located below the third county tier of Michigan and within 1,000 feet of suitable forested habitat that contain suitable roosting spaces (e.g., expansion joints, cracks/crevices). Suitable culverts are at least 4 feet (1.2 meters) high and 50 feet (15 meters) long.

II. VOLUNTARY CONSERVATION MEASURES

NLEB benefit from the promotion of mature forest habitat, particularly hardwood/mixedwood stands containing standing snags, dying trees, and waterbodies such as streams, ponds, and forested wetlands. As NLEB are known to avoid traversing large open areas outside of migration, the protection and creation of wooded corridors (such as tree lines) can be extremely beneficial in connecting fragmented patches of suitable roosting/foraging habitat. Projects that involve cutting or trimming suitable roost trees, prescribed burning, pesticide (including insecticide and rodenticide) and/or aerial/nontargeted herbicide application in or near suitable habitat, and/or removal or modification of a suitable bridge/culvert(s) are encouraged to schedule these activities when NLEB are unlikely to be present on the landscape (inactive season) and limit the clearing of contiguous¹, suitable forested habitat to 10 acres or less. In Michigan, the inactive season dates for NLEB are defined based on location and distance from known hibernacula² (see Table 1).

Table 1. Recommended dates for voluntarily³ avoiding reasonable certainty of taking NLEB

Proposed Activity	Location	Recommended Activity Dates	Recommended Avoidance Dates
(1) Cutting/trimming/ of potential roost trees; (2) Prescribed burning within potentially suitable habitat or if flames/smoke will reach potential habitat; and/or (3) Pesticide and/or aerial/nontargeted herbicide application	In the Upper Peninsula and within 5 miles of one or more known NLEB hibernacula	October 15 through April 14	April 15 through October 14
	In the Upper Peninsula and more than 5 miles from known NLEB hibernacula	September 1 through May 14	May 15 through August 31
	In the Lower Peninsula and within 5 miles of one or more known NLEB hibernacula	November 1 through March 31	April 1 through October 31
	In the Lower Peninsula, outside the range of Indiana bat, and more than 5 miles from known NLEB hibernacula	September 1 through April 30	May 1 through August 31
	Within the range of the Indiana bat and	October 1 through April 14	April 15 through September 30

¹Connected to other suitable forest by 1,000 feet or less

²Project locations can be checked for proximity to known hibernacula through the Michigan Natural Features Inventory rare species database, by using the IPaC All-Species Michigan Determination Key, or by contacting the Michigan Ecological Services Field Office.

³Incidental take of NLEB is not prohibited in most of the species' Michigan range per the current final 4(d) rule.

	more than 5 miles from known NLEB hibernacula		
Removal/modification of an existing bridge or culvert suitable for day-roosting NLEB ⁴	October 15 through April 14		

If adhering to the recommended inactive season dates is not feasible, avoiding the months of June and July (period when young bats are unable to fly) likely offers some protection for roosting NLEB that may be present. However, please note that the recently proposed change in the species’ status (from threatened to endangered) may necessitate implementation of conservation measures considered voluntary under the current 4(d) rule. For example, any projects that may take or result in adverse effects to northern long-eared bat but are not prohibited under the 4(d) rule would be prohibited without a USFWS-issued permit if the proposed rule to reclassify the species as endangered is finalized.

We strongly encourage project managers, including Federal agencies and their designated representatives as well as proponents of non-Federal projects, to use the All-Species Michigan Determination Key in IPaC to evaluate potential effects of proposed activities on NLEB and other Federally listed species in Michigan. The key allows users to rely on the NLEB 4(d) rule for as long as it remains in effect, but also allows users to apply voluntary conservation measures to avoid adverse effects and/or a reasonable certainty of taking NLEB and will be updated based on changes to the species’ status or other relevant ESA regulations. For more information on using IPaC and its consultation tools to conduct project reviews for NLEB and/or other listed species, please see our [IPaC instructions for MI projects \(PDF\)](#).

Implementing conservation measures for NLEB helps to protect other native bat species, several which are experiencing recent population declines as a result of WNS and/or other factors. As significant predators of nocturnal insects, including many crop and forest pests, bats are important to Michigan’s agriculture and forests. For example, Whitaker (1995)⁵ estimated that a single colony of 150 big brown bats (*Eptesicus fuscus*) would eat nearly 1.3 million pest insects each year. Boyles et al. (2011)⁶ noted that the “loss of bats in North America could lead to agricultural losses estimated at more than \$3.7 billion/year,” and using their data for Michigan alone, we totaled the estimated value at over \$500 million per year (assuming standard crop pest survival). Taking proactive steps to help protect bats may be valuable to agricultural and timber producer yields and pest management costs.

⁴Suitable culverts are at least 4 feet (1.2 meters) high and 50 feet (15 meters) long.

⁵ Whitaker, J.O. 1995. Food of the Big Brown Bat *Eptesicus fuscus* from Maternity Colonies in Indiana and Illinois. *American Midland Naturalist* 134(2):346-360.

⁶ Boyles, J.G., P.M. Cryan, G.F. McCracken, and T.H. Kunz. 2011. Economic Importance of Bats in Agriculture. *Science* 332:41-42.

III. ESA GUIDANCE: PRIVATE LANDOWNERS/NON-FEDERAL PROJECTS

NLEB use a wide variety of forested habitats but are not found in all wooded areas in Michigan. The species' local distribution and abundance is influenced by both distance to hibernacula and quality of available habitat. Although it can be difficult to predict where the species may occur, once NLEB colonize a forest habitat for raising their young (pups), they will often return to the same areas annually.

As a result of this fidelity to specific locations, the Service's approach to implementation of the ESA is based in part on "known" locations where important habitat for NLEB has been documented; namely, hibernacula and maternity roost trees.

Please note that projects that require State permits or authorizations that implement Federal laws, or are supported by Federal funds (e.g., Clean Water Act, transportation projects), may have additional requirements under or similar to Section 7 of the ESA, as described in [section: IV. ESA GUIDANCE: FEDERAL PROJECTS](#).

Additionally, please contact the Michigan Ecological Services Field Office (contact information at the end of this document) for project-specific recommendations for wind development projects. Utility-scale wind turbines may attract and cause mortality of NLEB and warrant additional considerations.

In Michigan, what is required if there are no known NLEB hibernacula or roost trees near my project?

The Service does not require private landowners to conduct surveys for ESA-listed bats on their lands, and the current 4(d) rule does not prohibit potential take of NLEB where no hibernacula or maternity roost trees are known to occur. However, our records of these locations in Michigan are limited, and we expect NLEB roosts to be present in many locations in addition to those listed in this document (see [Michigan Known Hibernacula and Roost Tree Locations for NLEB](#)).

NLEB 4(d) Rule Take Prohibitions

The definition of "take" pursuant to the ESA includes to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect (see 50 CFR 17.3 for details). Our implementing regulations further define the term "harm" to include any act which actually kills or injures fish or wildlife, and emphasize that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.

The final 4(d) rule for the NLEB (50 CFR 17.40(o)) was published on January 14, 2016. Under the final rule, prohibitions in Michigan include:

- Actions that result in the incidental take of NLEB in known hibernacula.
- Actions that result in the incidental take of NLEB by altering a known hibernaculum's entrance or interior environment if it impairs an essential behavioral pattern, including sheltering NLEB.

- Tree-removal activities that result in the incidental take of NLEB when the activity: (1) occurs within 0.25 mile of a known hibernaculum; or (2) cuts or destroys known occupied maternity roost trees, or any other trees within a 150-foot radius of the maternity roost tree, during the pup season (June 1 through July 31).

Please note that not all tree-removal activities within the buffer of a hibernaculum or maternity roost tree will result in take. The timing and extent of tree removal may be an important consideration in those circumstances; please contact the Michigan Ecological Services Field Office to discuss your project plans in more detail. If your activity may result in incidental take that is prohibited based on the above, we will work with you to determine whether a permit pursuant to the ESA may be applicable, particularly if the activity cannot be completed by the time a final listing rule for the NLEB becomes effective (for more information on the current 4(d) rule and recent proposed rule to reclassify the NLEB as endangered, see the [USFWS NLEB page](#)).

As described in Section II, we strongly encourage project managers, including private landowners and proponents of non-Federal projects, to use the All-Species Michigan Determination Key in IPaC to evaluate potential effects of proposed activities on NLEB and other Federally listed species in Michigan. The All-Species Michigan Dkey allows users to quickly check whether their project is exempt from NLEB take prohibitions per the 4(d) rule and determine whether any conservation measures can be applied to voluntarily avoid or minimize impacts to the species, and the Key will be updated with any changes to the species' status or other relevant ESA regulations. For more information on using IPaC and its consultation tools to conduct project reviews for NLEB and/or other listed species, please see our [IPaC instructions for MI projects \(PDF\)](#).

Michigan Known Hibernacula and Roost Tree Locations for NLEB

We have compiled location information for NLEB hibernacula and known roosts trees in Michigan. This information can be used to help project planners in determining the applicability of provisions of the NLEB final 4(d) rule under the ESA. Please use the tables below to see if we have information that may be applicable to your project.

If you are planning a project that may impact suitable habitat in the Michigan townships below, please contact our office with more specific information on the location of your project, and we will confirm for you whether there are any known hibernacula within ¼ mile of your project or any known roost trees within 150 feet of your project.

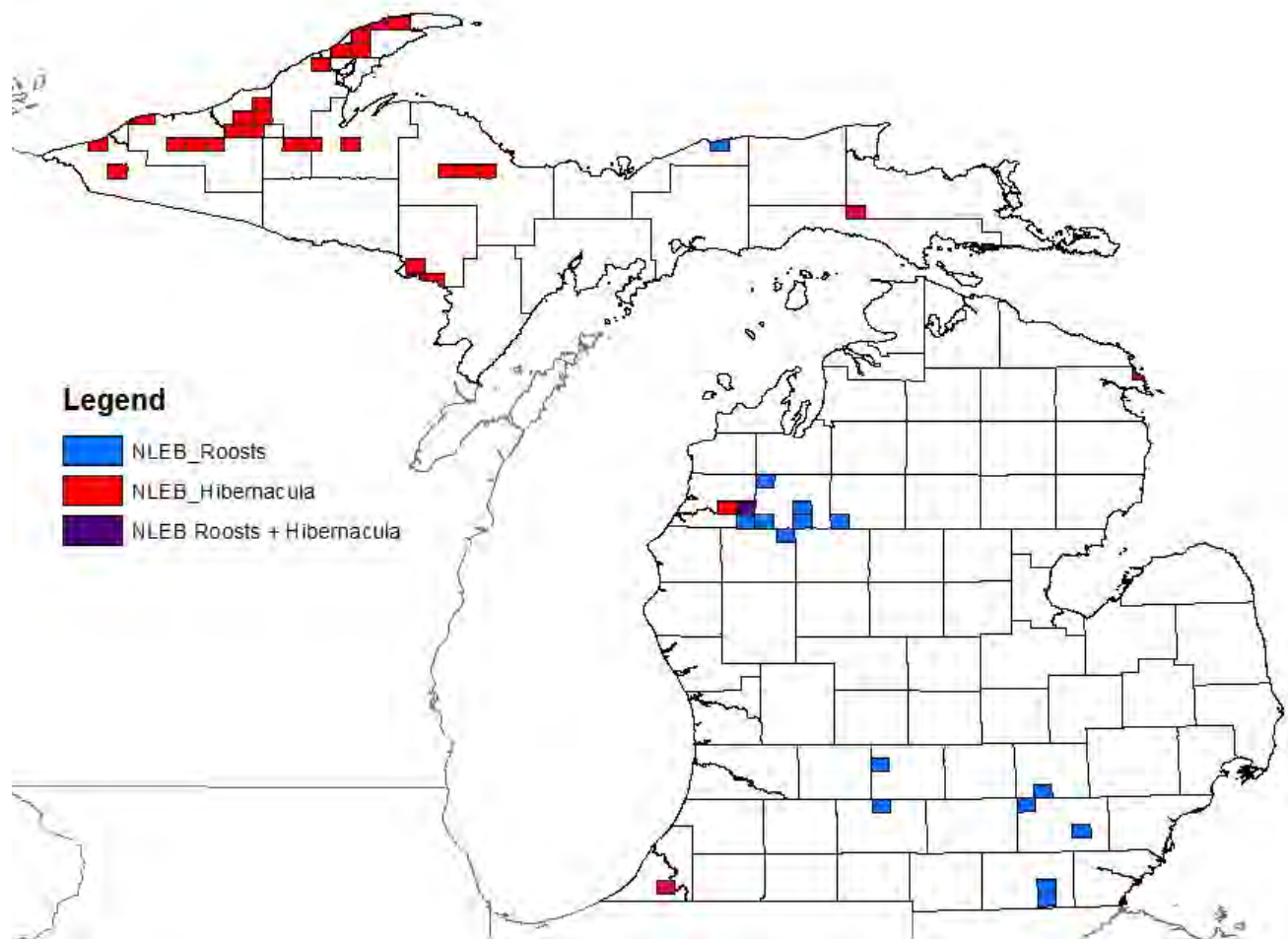
Where are the known NLEB hibernacula in Michigan?

Known NLEB in Michigan			
County	Townships Containing Hibernacula and/or Buffer Areas	Number of Hibernacula	Landownership Within Buffer(s)
Alpena	Alpena (T32NR9E)	1	Public
Baraga	L'Anse (T49NR33W)	1	Private
Berrien	Buchanan (T7SR18W)	1	Private
Dickinson	Breitung (T40NR30W, T39NR30W), Norway (T39NR29W)	8	Private (8)
Gogebic	Ironwood (T49NR46W); Bessemer/Wakefield (T47NR45W)	2	Private (1), public (1)
Houghton	Adams/Quincy/Franklin/Stanton (T55NR34W); Calumet (T56NR33W); Laird (T49NR35W, T49NR36W); Schoolcraft (T56NR32W)	3	Private (1), public (2)
Keweenaw	Allouez (T57NR32W, T58NR32W); Eagle Harbor/Grant (T58NR30W); Eagle Harbor/Houghton (T58NR31W)	10	Private (9), private + public (1)
Mackinac	Hendricks (T44NR7W)	4	Public (4)
Manistee	Dickson (T22NR14W, T22NR13W)	1	Private + public
Marquette	Ely (T47NR28W); Tilden (T47NR27W); Richmond (T47NR26W)	3	Private (3)
Ontonagon	Bohemia (T52NR37W); Carp Lake (T51NR44W, T51NR43W); Greenland (T51NR37W, T51NR38W, T50NR38W); Matchwood (T49NR41W, T49NR42W); Rockland (T50NR39W, T49NR40W)	42	Private (20), public (8), private + public (16)

Where are the known NLEB roost trees in Michigan?

Known NLEB Roost Tree Locations in Michigan			
County	Townships Containing Roosts and/or Buffer Areas	Number of known roosts	Landownership Within Buffer(s)
Alger	Burt (T49NR14W)	5 (all female)	Public (5)
Calhoun	Convis (T1SR6W)	1	Public (1)
Eaton	Vermontville (T3NR6W)	1 (female)	Private (1)
Lake	Dover (T20NR11W)	4 (all female)	Public (4)
Lenawee	Ogden (T8SR4E), Palmyra (T7SR4E)	81	Private (81)
Livingston	Putnam (T1NR4E)	2 (1 female)	Private (1), public (1)
Manistee	Dickson (T22NR13W), Norman (T21NR13W)	4 (all female)	Private (2), public (2)
Missaukee	Richland (T21NR8W)	4 (all female)	Private (4)
Washtenaw	Lyndon (T1SR3E), Pittsfield (T3SR6E)	3 (2 female)	Private (2), public (1)
Wexford	Cherry Grove (T21NR10W), Selma (T22NR10W), South Branch (T21NR12W), Wexford (T24NR12W)	20 (16 female)	Private (17), public (3)

Map of Known NLEB Occurrence, Roosts, and Hibernacula in MI



***Map last updated 7/22/2016. Map will be updated as additional information becomes available.**

IV. ESA GUIDANCE: FEDERAL PROJECTS

Section 7 Consultation

Under the ESA, requirements for Federal projects (i.e., projects funded, authorized, permitted, or implemented by a Federal agency) are different than requirements for wholly private or otherwise non-Federal projects. The ESA mandates all Federal departments and agencies to conserve listed species and to utilize their authorities in furtherance of the purposes of the ESA. Section 7 of the ESA, called “Interagency Cooperation,” is the mechanism by which Federal agencies ensure the actions they conduct, including those they fund or authorize, do not jeopardize the existence of any listed species.

Federal agencies must request a list of species and designated critical habitat that may be present in the project area from the Service via our [Information for Planning and Consultation \(IPaC\) website](#). Then they must determine whether their actions may affect those species or critical habitat. If a listed species or critical habitat may be affected, consultation with the Service is required.

The Service developed IPaC to help streamline the ESA review process. IPaC can assist users through the section 7 consultation process when a Federal agency authorizes, funds, permits, or carries out an action. For further information on obtaining an official Species List through IPaC and using available assisted Determination Keys, see our [IPaC instructions for Michigan projects](#).

Please note that Section 7 obligations or similar requirements may also apply to State permits or authorizations that implement Federal laws or projects that are supported by Federal funds (e.g., Clean Water Act, transportation projects).

For general guidance on Section 7(a)(2) obligations for Federal projects, see our [Step-by-Step Instructions](#).

IPaC Determination Keys

Determination Keys (Dkeys), available through the Service’s Information for Planning and Consultation (IPaC) web site, are logically structured sets of questions designed to assist users in determining if a project qualifies for a pre-determined consultation outcome based on existing programmatic consultations or internal USFWS standing analyses. Qualifying projects may generate USFWS concurrence letters instantly through IPaC. Dkeys provide consistent and transparent outcomes, and significantly reduce the time to complete consultation for qualifying projects.

Two Dkeys are currently available for evaluating the effects of Federal projects on NLEB in Michigan: The All-Species Michigan Dkey, and the FHWA, FRA, FTA Programmatic Consultation Dkey for Transportation Projects. As described in Section II, we strongly encourage project managers, including Federal agencies and/or their designated non-Federal representatives, to use IPaC, and in particular the All-Species Michigan Determination Key, to evaluate potential effects of proposed activities on NLEB in Michigan. The All-Species Michigan Dkey allows users to quickly check

whether their project qualifies for NLEB Streamlined Consultation and determine whether any conservation measures can be applied to voluntarily avoid or minimize adverse effects to the species. For additional details on using Dkeys and other IPaC tools, see our [IPaC instructions for MI projects](#).

NLEB Streamlined Consultation (optional for Federal projects that may affect but will not involve prohibited take of NLEB while the current 4(d) rule is in effect)

Federal actions that involve incidental take not prohibited under the final 4(d) rule for the NLEB may still result in effects to individual NLEB. As discussed above, section 7 of the ESA requires consultation with the Service if a Federal agency's action may affect a listed species. This requirement does not change when a 4(d) rule is implemented. However, for the NLEB 4(d) rule, the Service has provided a framework to streamline section 7 consultations when Federal actions may affect the NLEB but will not cause prohibited take. Federal agencies have the option to rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific section 7 responsibilities by using the framework for as long as the 4(d) rule remains in effect.

The NLEB Streamlined Consultation process has been incorporated into two of the three Determination Keys available for Michigan projects through IPaC. These are the All-Species Michigan DKey and the NLEB Streamlined Consultation DKey. For more information on the NLEB Streamlined Consultation process, visit the Service's [species web page](#).

Additionally, as described in Section I, please be aware that the Service recently published a proposal to reclassify the NLEB as endangered under the Endangered Species Act and must complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species.

Depending on the type of effects a project has on NLEB, the change in species status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). This is especially important if your project may result in incidental take of NLEB after the new listing goes into effect. If your project may require re-initiation of consultation, please contact the Michigan Ecological Services Field Office for additional guidance.

Until a final listing determination for NLEB becomes effective, use of the Streamlined Consultation framework is optional. An agency may choose to follow standard section 7 procedures instead, which will not change if the species is listed as endangered.

Even when take of NLEB is not prohibited per the 4(d) rule, we encourage Federal agencies to implement voluntary conservation measures (i.e., see Section II) and avoid adverse effects to the species whenever possible, both to minimize impacts to the

species and prevent a need to reinitiate consultation if the proposed rule to reclassify the species as endangered is finalized. The All-Species Michigan Dkey and the FHWA, FRA, FTA Programmatic Consultation Dkey for Transportation Projects are both options for projects that do not wish to automatically follow Streamlined Consultation procedures. If you think it may be possible to avoid adverse effects to NLEB without relying on the 4(d) rule biological opinion, we encourage you check if your project may be able to reach a “no effect” or “not likely to adversely affect” determination using one of these Dkeys. In particular, we encourage use of the All-Species Michigan Dkey, as it will simultaneously evaluate effects to NLEB and any other listed species or habitats that may occur in or near the action area. Even if adverse effects to NLEB cannot be avoided, projects can rely on the 4(d) rule biological opinion to obtain automated concurrence through the All-Species Michigan Dkey while the 4(d) rule remains in effect.

If your project may result in prohibited take of NLEB (see “[NLEB 4\(d\) Rule Take Prohibitions](#)” above), standard section 7 procedures apply, and this framework cannot be used.

Evaluating Effects to NLEB outside the Streamlined Consultation Framework

The Michigan Ecological Services Field Office has established a consistent and transparent process for evaluating potential effects of Federal actions on the NLEB, based on existing Service guidance and relevant literature, available Michigan survey data, and expert elicitation. This process is outlined below and integrated into our Michigan Threatened and Endangered Species Determination Key.

We do not expect Federal actions to rise to the level of adverse effects to NLEB when the following conditions are met⁷:

- The action area does not contain any known or potential hibernacula (including natural caves, abandoned mines, or underground quarries).
- The action will not remove/modify a human structure (barn, house, or other building) known to contain roosting NLEB.
- Tree clearing/cutting/trimming does not impact any potential roost trees⁸; OR, if suitable roost trees must be cut/trimmed, it is done so during the applicable recommended season (see Table 2 below).

⁷Projects that do not meet these conditions may still be able to avoid adverse effects to NLEB but warrant project-specific review and considerations.

⁸Suitable roost trees include live trees and/or snags ≥ 3 inches dbh that have exfoliating bark, cracks/crevices, and/or cavities.

- Tree clearing does not exceed 10 acres of contiguous⁹, forested habitat and does not fragment a connective corridor between two or more forest patches of at least 5 acres.
- Prescribed burning does not clear >10 acres of contiguous⁸, forest and is conducted during the recommended applicable season (see Table 2).
- If burning in non-suitable habitat adjacent to suitable forest when NLEB may be present (e.g., grassland or scrub/shrublands near mature forest), flame height and smoke are kept to a minimum.
- Application of pesticides (including insecticides and rodenticides) and/or aerial/nontargeted herbicide application is restricted to the applicable recommended season (see Table 2).
- Application of herbicides follows the label and is limited to targeted methods like spot-spraying, hack-and-squirt, basal bark, injections, cut-stump, or foliar spraying on individual plants or conducted during the applicable recommended season (see Table 2).
- Removal/modification of an existing bridge or culvert suitable for day-roosting NLEB¹⁰ does not result in the permanent loss of known or potential roosting spaces and is conducted during the recommended applicable season (see Table 2).
- Projects that include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s) apply the following conservation measures:
 - When installing new or replacing existing permanent lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society, the goal is to be as close to 0 for all three ratings with a priority of “uplight” of 0 and “backlight” as low as practicable.
 - Direct temporary lighting away from suitable habitat when bats may be present.

⁹Connected to other suitable forest by 1,000 feet or less

¹⁰Suitable bridges and culverts include those located below the third county tier of Michigan and within 1,000 feet of suitable forested habitat that contain suitable roosting spaces (e.g., expansion joints, cracks/crevices). Suitable culverts are at least 4 feet (1.2 meters) high and 50 feet (15 meters) long.

Table 2. Recommended dates for avoiding adverse effects to NLEB

Proposed Activity	Location	Recommended Activity Dates	Recommended Avoidance Dates
(1) Cutting/trimming/ of potential roost trees ¹¹ ; (2) Prescribed burning and or near potentially suitable habitat; and/or (3) Pesticide and/or aerial/nontargeted herbicide application	In the Upper Peninsula and within 5 miles of one or more known NLEB hibernacula ¹²	October 15 through April 14	April 15 through October 14
	In the Upper Peninsula and more than 5 miles from known NLEB hibernacula	September 1 through May 14	May 15 through August 31
	In the Lower Peninsula and within 5 miles of one or more known NLEB hibernacula	November 1 through March 31	April 1 through October 31
	In the Lower Peninsula, outside the range of Indiana bat, and more than 5 miles from known NLEB hibernacula	September 1 through April 30	May 1 through August 31
	Within the range of the Indiana bat and more than 5 miles from known NLEB hibernacula	October 1 through April 14	April 15 through September 30
	Removal/modification of an existing bridge or culvert suitable for day-roosting NLEB ¹³	October 15 through April 14	

¹¹Suitable roost trees include live trees and/or snags ≥ 3 inches dbh that have exfoliating bark, cracks/crevices, and/or cavities.

¹²Project locations can be checked for proximity to known hibernacula through the Michigan Natural Features Inventory rare species database, by using the IPaC All-Species Michigan Determination Key, or by contacting the Michigan Ecological Services Field Office.

¹³Suitable culverts are at least 4 feet (1.2 meters) high and 50 feet (15 meters) long.

If the above conditions are met, projects should be able to reach a “may affect, not likely to adversely affect” determination for NLEB through our IPaC All-Species Michigan Determination Key and/or through informal consultation with the Service outside the Dkey. If these conditions cannot be met and the Federal action agency does not want to rely on programmatic biological opinion for the final 4(d) rule, please contact our office for additional site-specific review regarding your project.

Note that these conditions are only necessary if NLEB are present. Prior to conducting activities that may impact NLEB, surveys can be done to determine if NLEB are present or likely absent from the action area. See our [Range-wide Survey Guidelines](#) for more information. In the absence of site-specific survey data, adherence to the above conditions should appreciably reduce the potential for adverse effects to NLEB.

In addition to habitat assessments and presence/probable absence surveys, bridge/culvert assessment can be conducted to determine whether a suitable bridge or culvert is occupied by bats. See these [Guidelines](#) for more information. If a bridge/culvert has been inspected for signs of roosting bats (guano, urine staining, bat vocalizations, and/or bats) during the summer roosting season (May 15 through August 15), and no bats or signs of bats were observed, work on the bridge/structure can proceed at any time of year.

V. MICHIGAN ECOLOGICAL SERVICES FIELD OFFICE CONTACT INFORMATION

Please contact the Michigan Ecological Services Field Office for more information on any projects occurring in Michigan.

U.S. Fish and Wildlife Service
Michigan Ecological Services Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823
Phone: 517-351-2555
Fax: 517-351-1443
TTY: 1-800-877-8339 (Federal Relay)
e-mail: EastLansing@fws.gov



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To:

April 17, 2023

Project Code: 2023-0070014

Project Name: CHERRY CAPITAL AIRPORT (TVC) INSTALLATION OF INSTRUMENT LANDING SYSTEM (ILS) RUNWAY 10 EA

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Official Species List

The attached species list identifies any Federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement section 7 of the Endangered Species Act), the accuracy of this species list should be verified after 90 days. You may verify the list by visiting the IPaC website (<https://ipac.ecosphere.fws.gov/>) at regular intervals during project planning and implementation. To update an Official Species List in IPaC: from the My Projects page, find the project, expand the row, and click Project Home. In the What's Next box on the Project Home page, there is a Request Updated List button to update your species list. Be sure to select an "official" species list for all projects.

Consultation requirements and next steps

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize Federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-Federal representative) must consult with the Fish and Wildlife Service if they determine their project may affect listed species or critical habitat.

There are two approaches to evaluating the effects of a project on listed species.

Approach 1. Use the All-species Michigan determination key in IPaC. This tool can assist you in

making determinations for listed species for some projects. In many cases, the determination key will provide an automated concurrence that completes all or significant parts of the consultation process. Therefore, we strongly recommend screening your project with the **All-Species Michigan Determination Key (Dkey)**. For additional information on using IPaC and available Determination Keys, visit <https://www.fws.gov/media/mifo-ipac-instructions> (and click on the attachment). Please carefully review your Dkey output letter to determine whether additional steps are needed to complete the consultation process.

Approach 2. Evaluate the effects to listed species on your own without utilizing a determination key. Once you obtain your official species list, you are not required to continue in IPaC, although in most cases using a determination key should expedite your review. If the project is a Federal action, you should review our section 7 step-by-step instructions before making your determinations: <https://www.fws.gov/office/midwest-region-headquarters/midwest-section-7-technical-assistance>. If you evaluate the details of your project and conclude “no effect,” document your findings, and your listed species review is complete; you do not need our concurrence on “no effect” determinations. If you cannot conclude “no effect,” you should coordinate/consult with the Michigan Ecological Services Field Office. The preferred method for submitting your project description and effects determination (if concurrence is needed) is electronically to EastLansing@fws.gov. Please include a copy of this official species list with your request.

For all **wind energy projects** and **projects that include installing communications towers that use guy wires**, please contact this field office directly for assistance, even if no Federally listed plants, animals or critical habitat are present within your proposed project area or may be affected by your proposed project.

Migratory Birds

Please see the “Migratory Birds” section below for important information regarding incorporating migratory birds into your project planning. Our Migratory Bird Program has developed recommendations, best practices, and other tools to help project proponents voluntarily reduce impacts to birds and their habitats. The Bald and Golden Eagle Protection Act prohibits the take and disturbance of eagles without a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at <https://www.fws.gov/program/eagle-management/eagle-permits> to help you avoid impacting eagles or determine if a permit may be necessary.

Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your consideration of threatened and endangered species during your project

planning. Please include a copy of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Michigan Ecological Services Field Office

2651 Coolidge Road Suite 101

East Lansing, MI 48823-6360

(517) 351-2555

PROJECT SUMMARY

Project Code: 2023-0070014

Project Name: CHERRY CAPITAL AIRPORT (TVC) INSTALLATION OF INSTRUMENT LANDING SYSTEM (ILS) RUNWAY 10 EA

Project Type: Airport - New Construction

Project Description: The proposed project would consist of a localizer, localizer shelter, and an ILS antenna. The ILS antenna will be installed on the airfield, at the southwest intersection of Taxiway C and Taxiway D, north of Runway 10/28. Installation of the ILS antenna requires that a 260' section of Taxiway C is removed between Taxiway D and Runway 10/28 in order to accommodate the specific site for the antenna. The future localizer shelter will be installed adjacent to the existing medium-intensity approach lighting system - MALSR - shelter, off the end of Runway 28.

The existing area for the installation of the ILS antenna consists of maintained turf grass at the intersection of Taxiways C and D. The existing area for the proposed localizer shelter is also maintained turf grass, located adjacent to the existing MALSR shelter. According to historical as-built drawings, the proposed project areas have been disturbed and graded since at least 1966.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@44.7418736,-85.58606265,14z>



Counties: Grand Traverse County, Michigan

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/GQTABTMHWBBDLPWZIIU2Q367E/documents/generated/6983.pdf	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ Only actions that occur along coastal areas during the Red Knot migratory window of MAY 1 - SEPTEMBER 30. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

REPTILES

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ For all Projects: Project is within EMR Range Species profile: https://ecos.fws.gov/ecp/species/2202 General project design guidelines: https://ipac.ecosphere.fws.gov/project/GQTABTMHWBBNLDPWZIIU2Q367E/documents/generated/5280.pdf	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

FLOWERING PLANTS

NAME	STATUS
Pitcher's Thistle <i>Cirsium pitcheri</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8153	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\) list](#) or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

NAME	BREEDING SEASON
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Common Tern <i>Sterna hirundo hirundo</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Aug 31
Eastern Whip-poor-will <i>Antrostomus vociferus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Olive-sided Flycatcher <i>Contopus cooperi</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort — no data

SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC



Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of

certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

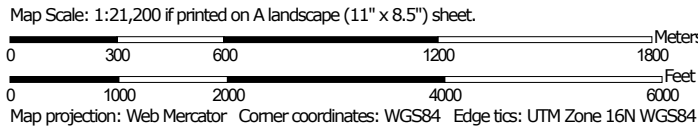
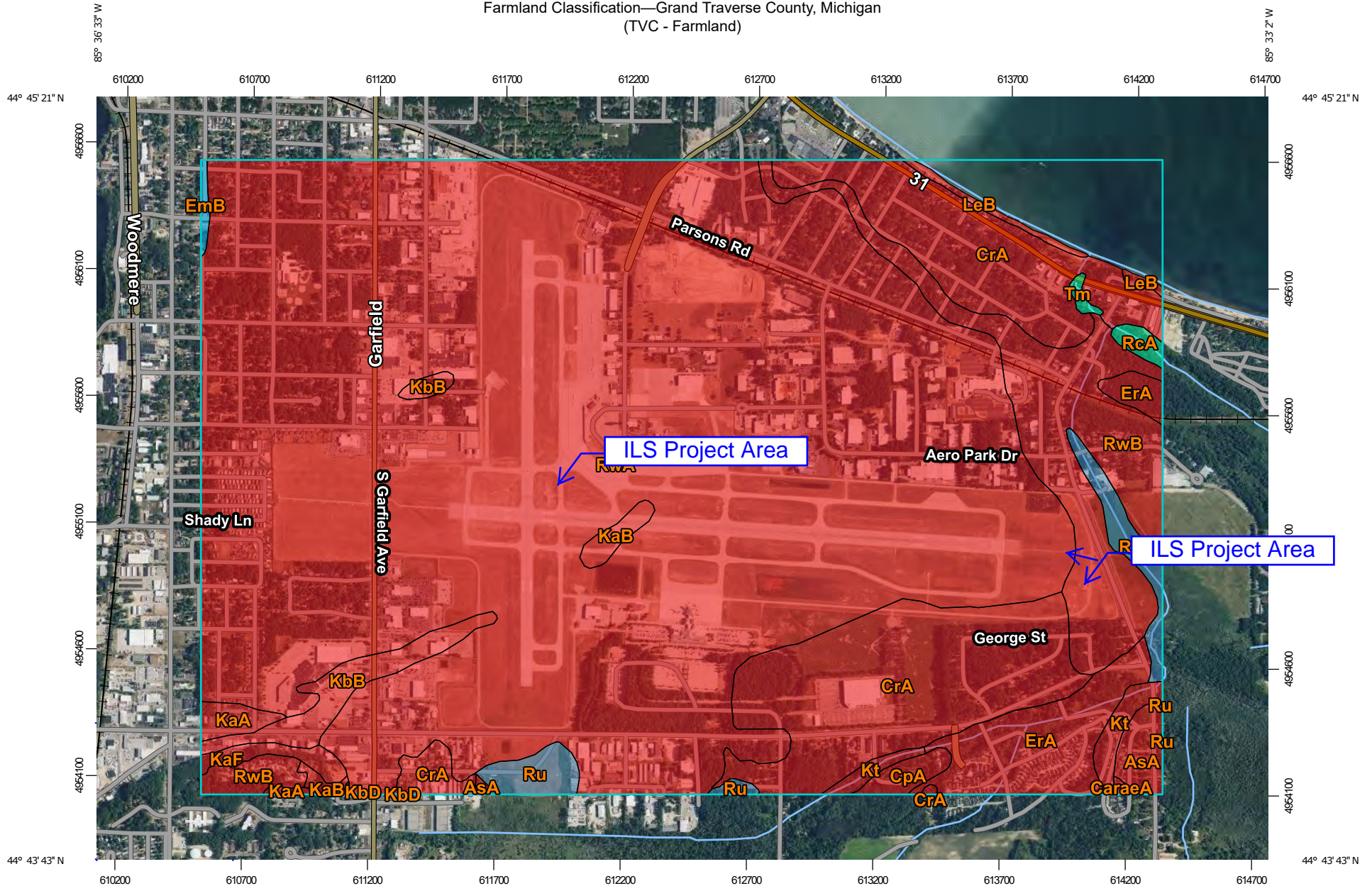
IPAC USER CONTACT INFORMATION

Agency: Mead & Hunt, Inc.
Name: Brauna Hartzell
Address: 2440 Deming Way
City: Middleton
State: WI
Zip: 53562
Email: brauna.hartzell@meadhunt.com
Phone: 6082736380

Appendix F

Farmland Classification


Farmland Classification—Grand Traverse County, Michigan
(TVC - Farmland)



Farmland Classification—Grand Traverse County, Michigan
(TVC - Farmland)









MAP LEGEND








Area of Interest (AOI)






 Area of Interest (AOI)








Soils



Soil Rating Polygons

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season









-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of statewide importance, if drained
-  Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated

-  Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated and drained
-  Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
-  Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60





































-  Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough
-  Farmland of statewide importance, if thawed
-  Farmland of local importance
-  Farmland of local importance, if irrigated

-  Farmland of unique importance
-  Not rated or not available

Soil Rating Lines

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Farmland Classification—Grand Traverse County, Michigan
(TVC - Farmland)

	Prime farmland if subsoiled, completely removing the root inhibiting soil layer		Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium		Farmland of unique importance		Prime farmland if subsoiled, completely removing the root inhibiting soil layer	
	Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60		Farmland of statewide importance, if irrigated and drained		Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season	Soil Rating Points		Not prime farmland		Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
	Prime farmland if irrigated and reclaimed of excess salts and sodium		Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season		Prime farmland if drained		Prime farmland if irrigated and reclaimed of excess salts and sodium	
	Farmland of statewide importance		Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer		Farmland of statewide importance, if warm enough		Prime farmland if protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance	
	Farmland of statewide importance, if drained		Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60		Farmland of statewide importance, if thawed		Prime farmland if irrigated		Farmland of statewide importance, if drained	
	Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season				Farmland of local importance		Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season	
	Farmland of statewide importance, if irrigated				Farmland of local importance, if irrigated		Prime farmland if irrigated and drained		Farmland of statewide importance, if irrigated	
							Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season			

Farmland Classification—Grand Traverse County, Michigan
(TVC - Farmland)

<ul style="list-style-type: none">  Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season  Farmland of statewide importance, if irrigated and drained  Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season  Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer  Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60 	<ul style="list-style-type: none">  Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium  Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season  Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season  Farmland of statewide importance, if warm enough  Farmland of statewide importance, if thawed  Farmland of local importance  Farmland of local importance, if irrigated 	<ul style="list-style-type: none">  Farmland of unique importance  Not rated or not available <p>Water Features</p> <ul style="list-style-type: none">  Streams and Canals <p>Transportation</p> <ul style="list-style-type: none">  Rails  Interstate Highways  US Routes  Major Roads  Local Roads <p>Background</p> <ul style="list-style-type: none">  Aerial Photography 	<p>The soil surveys that comprise your AOI were mapped at 1:15,800.</p> <p>Please rely on the bar scale on each map sheet for map measurements.</p> <p>Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)</p> <p>Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.</p> <p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p> <p>Soil Survey Area: Grand Traverse County, Michigan Survey Area Data: Version 16, Aug 26, 2022</p> <p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p> <p>Date(s) aerial images were photographed: Jul 2, 2020—Nov 12, 2020</p> <p>The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.</p>
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Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AsA	Au Gres-Saugatuck sands, 0 to 2 percent slopes	Not prime farmland	14.2	0.6%
CaraeA	Carlisle muck, lake moderated snowy, 0 to 2 percent slopes	Not prime farmland	0.9	0.0%
CpA	Croswell loamy sands, 0 to 2 percent slopes	Not prime farmland	9.0	0.4%
CrA	Croswell-Rubicon sands, 0 to 2 percent slopes	Not prime farmland	284.1	12.0%
EmB	East Lake-Mancelona loamy sands, 2 to 6 percent slopes	Farmland of unique importance	2.6	0.1%
ErA	Eastport-Roscommon sands, 0 to 2 percent slopes	Not prime farmland	68.9	2.9%
KaA	Kalkaska loamy sand, 0 to 2 percent slopes	Not prime farmland	9.7	0.4%
KaB	Kalkaska loamy sand, 2 to 6 percent slopes	Not prime farmland	7.4	0.3%
KaE	Kalkaska loamy sand, 18 to 25 percent slopes	Not prime farmland	2.7	0.1%
KaF	Kalkaska loamy sand, 25 to 45 percent slopes	Not prime farmland	9.6	0.4%
KbB	Kalkaska sand, 0 to 6 percent slopes	Not prime farmland	32.3	1.4%
KbD	Kalkaska sand, 6 to 18 percent slopes	Not prime farmland	0.1	0.0%
Kt	Kerston muck	Not prime farmland	15.2	0.6%
LeB	Lake beach and Eastport sand, 0 to 6 percent slopes	Not prime farmland	6.6	0.3%
RcA	Richter loams, 0 to 2 percent slopes, overwash	Prime farmland if drained	5.0	0.2%
Ru	Roscommon mucky loamy sand	Farmland of local importance	34.4	1.5%
RwA	Rubicon sand, 0 to 2 percent slopes	Not prime farmland	1,639.6	69.3%
RwB	Rubicon sand, 0 to 6 percent slopes	Not prime farmland	153.7	6.5%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Tm	Tonkey mucky sandy loam	Prime farmland if drained	2.2	0.1%
Totals for Area of Interest			2,364.4	100.0%

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Appendix G

Phase I ESA



Baseline Environmental Assessment Submittal Form

This form is for submittal of a Baseline Environmental Assessment (BEA), as defined by Part 201, Environmental Remediation and Part 213, Leaking Underground Storage Tanks, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, for the purpose of establishing an exemption to liability pursuant to Section 20126(1)(c) and Section 21323a(1)(b) for a new owner or operator of property that is a facility as defined by Section 20101(1)(s) or Property as defined by Section 21303(d). The BEA report must be conducted either prior to or within 45 days after becoming the owner or operator, whichever is earliest. This form and the BEA report must be submitted prior to or within 6 months of becoming the owner or operator whichever is earliest. A separate BEA is required for each legal entity that is or will be a new owner or operator of the property. To maintain the exemption to liability, the owner and operator must also disclose the BEA to any subsequent purchaser or transferee before conveying interest in the property pursuant to Section 20126(1)(c) and Section 21323a(1)(b).

DUE CARE: An owner or operator of a facility or Property also has due care obligations under Section 20107a and Section 21304c with respect to any existing contamination. Documentation of due care evaluations, all conducted response activities, and compliance with 7a or 4c need to be available to EGLE, but not submitted, within 8 months of becoming the owner or operator of a facility and/or Property.

Section A: Legal Entity Information

Name of legal entity that does or will own/operate property: Northwest Regional Airport Authority	Contact for BEA questions if different from submitter, Name & Title:
Mailing Address: 727 Fly Don't Drive	Company:
City, State and Zip Code: Traverse City, MI 49686	Address:
Contact Person (Name and Title): Kevin Klein, CEO	City, State and Zip Code:
Telephone Number: 231-947-2250	Telephone Number:
Email Address: Kevin.Klein@tvairport.com	Email Address:

Section B: Property Information

Name of Property: Cherry Capital Airport	County: Grand Traverse
Street Address(es) of Property: 727 Fly Don't Drive 1800 Stultz Drive	City/Village/Township: Traverse City
City, State and Zip Code: Traverse City, MI 49686	Township, Section and Range: Sec. 12, 13, & 14 T27N, R11W Sec. 17 & 18, T27N, R10W
Property Tax ID (include all applicable IDs): 51-113-002-02, 51-113-002-03, 51-113-002-04, and 51-017-001-00	Decimal Degrees Latitude and Longitude 44.7409778°, -085.5877194°
Address(es) according to tax records, if different than above:	Collection Method: Survey <input type="checkbox"/> GPS <input type="checkbox"/> Interpolation <input checked="" type="checkbox"/>
Status of submitter relative to the property (check all that apply)	Reference Point for Latitude and Longitude:

	Former	Current	Prospective	Center of site <input type="checkbox"/>	Main/front door <input type="checkbox"/>
Owner	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Front gate/main entrance <input type="checkbox"/>	Other <input checked="" type="checkbox"/>
Operator	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Intersection of runways	

Section C: Source of Contamination at the Property **Enter ID #**

Facility - regulated pursuant to Part 201:	New <input type="checkbox"/>	Existing <input checked="" type="checkbox"/>	Existing 201 EGLE ID number:	280000024
Property - regulated pursuant to Part 213:	New <input type="checkbox"/>	Existing <input checked="" type="checkbox"/>	Existing 213 EGLE ID number:	00007311
(check all that are known to apply):				
Source other than Part 201 or Part 213, or source unknown	<input type="checkbox"/>			
Oil or gas production and development regulated pursuant to Part 615 or 625	<input type="checkbox"/>			
Licensed landfill regulated pursuant to Part 115	<input type="checkbox"/>			
Licensed hazardous waste treatment, storage, or disposal facility regulated pursuant to Part 111	<input type="checkbox"/>			

Section D: Applicable Dates (provide date for all that are relevant): **MM/DD/YYYY**

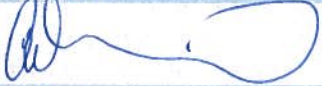
Date All Appropriate Inquiry (AAI) Report or Phase I Environmental Assessment Report completed:	09/29/2021
Date Baseline Environmental Assessment Report conducted:	11/12/2021
Date submitter first became the owner:	10/01/2021
Date submitter first became the operator:	10/01/2021
Date submitter first became the operator (if prior to ownership):	
Anticipated date of becoming the owner for prospective owners:	
Anticipated date of becoming the operator for prospective operators:	
If former owner or operator of this property, prior dates of being the owner or operator:	

Section E: Check the appropriate response to each of the following questions: **YES NO**

1. Is the property at which the BEA was conducted a "facility" as defined by Section 20101(1)(s) or a Property as defined by Section 21303(d)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Was the All Appropriate Inquiry (AAI) or Phase I Environmental Assessment Report completed in accordance with Section 20101(1)(f) and or 21302(1)(b)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Was the BEA, including the sampling, conducted either prior to or within 45 days of the date of becoming the owner, operator, or of foreclosure, whichever is earliest?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Is this BEA being submitted to the department within 6 months of the submitter first becoming the owner or operator, or foreclosing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Does the BEA provide sufficient rationale to demonstrate that the data is reliable and relevant to define conditions at the property at the time of purchase, occupancy, or foreclosure, even if the BEA relies on studies of data prepared by others or conducted for other purposes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Does this BEA contain the legal description of the property addressed by the BEA?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Does this BEA contain the environmental analytical results, a detailed, scaled map (not aerial photo) showing the sample locations, and the basis for the determination that the property is a facility as defined by Section 20101(1)(s) or the basis for the determination that the property is a Property as defined by Section 21303(d)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>


Section F: Environmental Consultant Signature:

I certify to the best of my knowledge and belief, that this BEA and all related materials are true, accurate, and complete. I certify that the property is a facility as defined by Section 20101(1)(s) or a Property as defined by Section 21303(d) and have provided the sampling and analyses that support that determination. I certify that any exceptions to, or deletions from, the All Appropriate Inquiry Rule are described in Section 1 of the BEA report.

Signature: 	Date: 11/12/2021
Printed Name: Adam Segerlind	Company: Gosling Czubak
Mailing Address: 1280 Business Park Drive	City, State and Zip Code: Traverse City, MI 49686
Telephone Number: 231-946-9191	Email Address: aesegerlind@goslingczubak.com

Section G: Legal Entity Signature:

With my signature below, I certify that to the best of my knowledge and belief, this BEA and all related materials are true, accurate, and complete.

Signature: 	Date: 11/12/2021
Printed Name: Kevin Klein	Title and relationship of signatory to submitter: Chief Executive Officer Northwest Regional Airport Authority
Mailing Address: 727 Fly Don't Drive	City, State and Zip Code: Traverse City, MI 49686
Telephone Number: 231-947-2250	Email Address: Kevin.Klein@tvcairport.com

This form should be submitted to EGLE Remediation & Redevelopment Division District Office for the county in which the property is located, unless the response activity is related to a facility that is regulated by another EGLE Division. An office map is located at www.michigan.gov/EGLErrd. The BEA report and submittal form should be addressed to the field operations contact, located via the [EGLE-RRD contact map](#). If regulated by another division, contact should be made with that division for information on where to submit the form and report.

For information or assistance on this publication, please contact the (program), through EGLE Environmental Assistance Center at 800-662-9278. This publication is available in alternative formats upon request.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

This form and its contents are subject to the Freedom of Information Act and may be released to the public.

CONTENTS OF BASELINE ENVIRONMENTAL ASSESSMENT REPORT

1. Introduction and Discussion:
 - a. Owner/operator information (name, mailing address, etc.).
 - b. Intended use of property (i.e., residential, institutional, industrial, gas station, commercial, etc.).
 - c. Executive summary of All Appropriate Inquiry (AAI) or ASTM Phase I Environmental Site Assessment (ESA) if available or a short summary of the findings and opinions of the AAI and the conditions indicative of releases or threatened releases of hazardous substances; or recognized environmental conditions identified in a Phase I Environmental Assessment.
 - d. Any exceptions to, or deletions from, the AAI Rule 40 CFR 312 or ASTM E1527-13.
 - e. Discussion of data gaps identified in the AAI or ASTM Phase I ESA and how they affect this BEA.
 - f. Discussion of the sampling completed, including the purpose and methods. If the data was not collected by the submitter or environmental professional, the demonstration that the data is reliable and relevant to define the conditions at the property.
 - g. The general location(s) of the known contamination on the property including the environmental media affected.
 - h. The basis for the conclusion that the property is a facility (Part 201) and/or a Property (Part 213).
2. Property Information
 - a. Legal description of property.
 - b. Survey map(s) (not aerial photographs) accurately depicting the property boundaries, property tax ID(s), and, if applicable, each parcel boundaries. If a legal description simply references a lot or plat, include a copy of the subdivision plat showing this property. A legal boundary survey by a licensed surveyor is required if the property covered by the BEA is greater or less than the legal property description(s). A legal survey is highly recommended when the property description is complex, has recently changed, multiple parcels are included in one BEA, or other situations where the exact property the BEA covers may be an issue when relying on the BEA for liability protection in the future.
 - c. Scaled, detailed site map(s) (**not aerial photographs or maps**) with site structures, sample locations and depths, and detected contaminant concentrations.
 - d. Scaled area map showing property in relation to surrounding area (such as topographic or aerial maps).
 - e. Property location: Street/City/State/Zip.
 - f. Spatial data required on form: County; City/Village/Township that is the governmental unit with jurisdiction; Town, Range, Section, Quarter and Quarter-Quarter Section; latitude and longitude coordinates including the information on how those were obtained.
3. Facility or Property Status
 - a. Table listing the hazardous substances, CAS Number, concentrations, sample location(s) and depths, and media affected, that are known to exceed residential criteria at the property.
 - b. Laboratory analytical data sheets and chain-of-custody documents.
4. Identification of the author of the BEA
 - a. Name, qualifications as an environmental consultant, company, contact information, etc.
5. AAI Report or ASTM Phase I ESA
 - a. The report must consider hazardous substances as defined by Section 20101(1)(y) and/or regulated substances as defined by Section 21303(g).
6. References (other than those already included in the AAI or ASTM Phase I ESA).

FOR SUBMITTAL TO EGLE

- Phase I ESA: Do **NOT** include the environmental database search report (e.g., EDR Radius Map Report) or copies of EGLE files.
- Phase I ESA: DO include all historical aerial photographs, Sanborn Fire Insurance maps, etc.
- Do **NOT** submit copies of documents that already exist in EGLE district office files.
- DO provide copies of pertinent information and a reference to the location of the complete information within the EGLE file. *Example: include data tables and maps in the BEA but only reference the supporting analytical reports located in EGLE files by providing the file name, facility or site number, report name, and report date.*
- Remove from the BEA and any attachments any *personally identifiable information* prior to submittal to EGLE.

Baseline Environmental Site Assessment

Cherry Capital Airport

Northwest Regional Airport Authority

Traverse City, Michigan

November 12, 2021

Prepared For:

Northwest Regional Airport Authority

727 Fly Don't Drive

Traverse City, Michigan 49686

Gosling Czubak Project # 2021630002.02

CIVIL ENGINEERING

SURVEYING

ENVIRONMENTAL SERVICES

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GoslingCzubak
engineering sciences, inc.

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ATTACHMENTS

- Att. 1** **PFAS Sampling Results Figures**
- Att. 2** **Soil VOC Assessment Information**
- Att. 3** **Groundwater VOC Assessment Information**
- Att. 4** **Property Information**
- Att. 5** **Analytical Data Tables**
- Att. 6** **Phase I ESA Report**

1.0 INTRODUCTION AND DISCUSSION

Gosling Czubak Engineering Sciences, Inc. (Gosling Czubak) was retained by the Northwest Regional Airport Authority (NRAA) of Traverse City, Michigan to perform environmental site assessment (ESA) services for the Cherry Capital Airport (the Property). Gosling Czubak completed a Phase I ESA report for the Property on September 29, 2021. The Phase I ESA identified recognized environmental conditions (RECs) on the property. This Baseline Environmental Assessment (BEA) presents information used to determine the Property's status as a "facility" as defined in Part 201 of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994, as amended.

1.1 Owner and Operator Information

The owner of the Property, as of October 1, 2021, is the NRAA. NRAA will conduct operations on the Property and will also lease portions of the property to commercial and private tenants. The intended use of the Property by the NRAA and prospective tenants is for air transportation and related services, such as commercial airline traffic, private aircraft hangars, aircraft maintenance activities, aircraft and vehicular fueling, firefighting and rescue services, commercial retail, educational and instructional services, and offices.

1.2 Phase I ESA Executive Summary

The following executive summary was taken from the Phase I ESA, prepared by Gosling Czubak, dated September 29, 2021. The "subject property" and "property" referenced in the Phase I ESA text is the same real estate as referenced by the term "Property" as used in this BEA.

Gosling Czubak Engineering Sciences, Inc. (Gosling Czubak) conducted a Phase I Environmental Site Assessment (ESA) for the subject property on behalf of the Northwest Regional Airport Authority (NRAA). The subject property is currently jointly owned by Leelanau and Grand Traverse counties and occupied by Cherry Capital Airport (TVC), air travel related businesses, and private air travel related uses (i.e. hangars for private planes).

This assessment has revealed evidence of eighteen recognized environmental conditions (RECs) associated with the subject property. The RECs identified are related to current and past storage,

use, and disposal of hazardous substances and petroleum products on the subject property. During preparation of this Phase I ESA, evidence of seven existing underground storage tanks (UST) and nine existing above ground storage tanks (AST) were identified. Other RECs include the current and past use of Class B aqueous film forming foam (AFFF) and deicing solutions. AFFF is known to contain per- and polyfluoroalkyl substances (PFAS). Although PFAS are not CERCLA regulated substances, the State of Michigan has identified PFAS as a hazardous substance under Part 201 of NREPA. Deicing solutions, which based upon information obtained during the site reconnaissance is primarily propylene glycol at this time, has the potential to contain other hazardous substances^{1,2} and potentially cause impact to groundwater and surface waters².

The Phase I ESA ***has revealed evidence*** of four historical recognized environmental conditions (HRECs) associated with the subject property. These HRECs are primarily related to closed petroleum UST and leaking UST (LUST) sites on the property. No evidence of controlled recognized environmental conditions (CRECs) was noted during completion of this Phase I ESA.

1.3 All Appropriate Inquiry Rule Exceptions/Deletions

The subject property covers an area of over 1,000 acres, has a perimeter of ±10 miles, and is occupied by multiple tenants. While a good faith effort was made by Gosling Czubak to visit the entire subject property and observe the uses of adjoining parcels during completion of the Phase I ESA, portions of the property were not observed, either due to physical constraints (i.e. heavily wooded), administrative constraints (i.e. limited security access), or budgetary and time constraints. Gosling Czubak personnel were not able to obtain access to the following areas of the subject property during completion of the site visits:

- Air carrier ramp located north of the main terminal building (part of secure identification display area {SIDA})

¹ *Technical Fact Sheet – 1,4-Dioxane*. U.S. EPA. January 2013.

² *Environmental Impact and Benefit Assessment for the Final Effluent Limitation Guidelines and Standards for the Airport Deicing Category*. U.S. EPA. April 2012.

- The air traffic control tower and vicinity within the fence controlled by the Federal Aviation Administration (FAA) at 1275 Airport Access Road
- The line shack, located near the general aviation terminal at 1200 Airport Access Road, which is also controlled by the FAA
- Wetlands/forested portions of south clear zone (NE $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 24, T27N, R11W)
- Stream corridor and wetland/forested portions of east clear zone (SW $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 17 and NE $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 18, T27N, R10W)
- The movement areas of the air operations area (i.e. on the runways)

The Northwestern Regional Airport Commission (NRAC) was identified as the only major occupant³ on the property and, therefore, was the only tenant interviewed during completion of the Phase I ESA.

The purpose of this BEA is to identify the property's status as a facility under Part 201 and is not intended to delineate the extent of contamination, nor evaluate the property for due care compliance under Section 20107a of NREPA.

1.4 Data Failure Discussion

Obvious uses of the Property were identified from the time of the earliest available documentation that was reasonably ascertainable, publicly available, and practically reviewable to the present. Data failures representing significant data gaps were not noted during the historical research of the Property.

1.5 Relevant and Reliable Environmental Data

This BEA was developed utilizing soil and groundwater data collected by Gosling Czubak during evaluation and assessment of known environmental conditions on the Property. The Property is a known Part 201 facility (ID #280000024) and Part 213 facility (ID #00007311). Concentrations of PFAS above

³ Definition of Major Occupant per ASTM E1527-13: those tenants, subtenants, or other persons or entities each of which uses at least 40 % of the leasable area of the property or any anchor tenant when the property is a shopping center.

residential clean up criteria in the soil and groundwater on the Property are documented in the following reports previously submitted to the Department of Environment, Great Lakes, and Energy (EGLE):

- *PFAS Soil Investigation Report*. Gosling Czubak, December 8, 2020
- *Third Quarter 2021 PFAS Groundwater Sampling Report*. Gosling Czubak, September 29, 2021.

Results of PFAS sampling in soil and groundwater are summarized in the figures provided in Attachment 1. Full descriptions of methods and results are presented in the aforementioned reports.

1.5.1 Volatile Organic Compounds in Soil

On August 4 and 5, 2020, GCES completed eleven soil borings to delineate the presence of non-aqueous phase liquids (NAPL). Soil borings (SB-107 through SB-117) were advanced in the vicinity of a leaking underground gasoline storage tank that was removed in 1999. A release was documented at the time of tank removal (REL-0293-99) and is considered an open release in accordance with Part 213 of NREPA.

Borings ranged in depth from 17 to 19 feet below ground surface (bgs). Groundwater was encountered at 8.5 feet bgs. Soil samples were collected at a minimum of every two feet at each boring location and field screened for volatile organic compounds (VOCs) using a MiniRAE[®] photoionization detector (PID), calibrated to 100 parts-per-million isobutylene. The vadose-zone samples exhibiting the highest PID reading or suspect lithology or the deepest vadose soils encountered (if no elevated PID or suspect soil lithology was observed) were selected for laboratory analysis.

Four soil samples were collected into laboratory supplied containers, stored on ice, and delivered to Grand Traverse Analytical laboratory in Traverse City, Michigan. Soil samples were submitted for analysis of leaded gasoline parameters, which include lead (EPA Method 7420) and petroleum related VOCs consisting of benzene, toluene, ethylbenzene, and xylenes (BTEX), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, methyl-tert-butyl ether, naphthalene, 2-methylnaphthalene, ethylene dibromide, 1,2-dichloroethane (EPA Method 8260B).

Soil samples from the saturated zone were field screened to evaluate for the presence of NAPL. Soils from the zones of interest, based on PID readings and visual observation, were placed into a jar along with distilled water and a lysochrome dye that reacts in the presence of NAPL. Samples from three

borings, SB-109, SB-113, and SB-115, were also collected for total petroleum hydrocarbon – gasoline range organics analysis (TPH/GRO).

Of the four vadose zone soil samples submitted for VOC analysis from the former UST area, none of the samples contained concentrations of petroleum indicator parameters at concentrations greater than the Risk-Based Screening Levels (RSBL) developed under Part 213 of NREPA. Field screening identified four soil borings with residual NAPL. Soil sample locations, boring logs, and laboratory results are presented in Attachment 2.

1.5.2 Volatile Organic Compounds in Groundwater

Groundwater sampling for VOC in the vicinity of the former LUST was performed on August 2 and 3, 2021. Sampling activities included depth to water measurements, calculation of groundwater elevations, collection of field groundwater data, and collection of groundwater samples for laboratory analysis.

Groundwater samples were collected using minimal drawdown (low-flow) sampling methods. New polyethylene tubing was set in each monitoring well before sampling. Samples were collected using a water level probe, peristaltic pump, and multiparameter meter with flow cell. Static water level was monitored and the pumping rate was adjusted to minimize drawdown in the well. Temperature, pH, conductivity, DO, ORP, and turbidity values were monitored. When parameters reached stabilization criteria, a groundwater sample was collected.

Groundwater samples were analyzed for leaded gasoline parameters by Grand Traverse Analytical in Traverse City, Michigan. Laboratory results identified the presence of xylenes at a concentration greater than the Part 213 Aesthetic-based Drinking Water RBSL at MW-43A. 1,2,4-Trimethylbenzene was observed at concentrations greater than the aesthetic drinking water RBSL at MW-43A and MW-44A. 1,3,5-Trimethylbenzene was observed at concentrations greater than the aesthetic drinking water RBSL at MW-43A, MW-44A, and MW-45A. A sample location map, laboratory reports, and field data collected during the groundwater sampling event are presented in Attachment 3.

2.0 BASIS OF FACILITY DETERMINATION

The Property is a “facility” as defined in Part 201 of Michigan’s Public Act 451 of 1994, as amended (Part 201). The basis for this conclusion is the presence of PFAS in groundwater above the residential cleanup criteria and soil in concentrations above the groundwater/surface water protection criteria developed under Part 201.

The Property is also a “facility” as defined in Part 213 of Michigan’s Public Act 451 of 1994, as amended (Part 213). The basis for this conclusion is the presence of hazardous substances in groundwater above their respective Part 213 Aesthetic Drinking Water RBSL and the presence of residual NAPL in the saturated zone soil.

3.0 PROPERTY INFORMATION

The Property is located in the City of Traverse City, Grand Traverse County, Michigan. Land use in the area surrounding the Property consists of commercial, industrial, and residential development. A site location map, legal description, and scaled map of the Property is included in Attachment 4.

The subject property is in Sections 12, 13, 14, and 24 of township 27N, range 11W and Sections 17 and 18 of township 27N, range 10W, the City of Traverse City, Grand Traverse County, Michigan. The property is commonly known as Cherry Capital Airport (TVC) and encompasses several addresses. The primary airport administration address is: 727 Fly Don’t Drive, Traverse City, MI 49686

The subject property includes four parcels with parcel identification numbers 51-113-002-02, 51-113-002-03, 51-113-002-04, and 51-017-001-00.

4.0 FACILITY STATUS

Subsurface conditions at the Property were evaluated using data obtained from soil borings and monitoring wells completed for environmental soil and groundwater sampling. The results of the environmental soil and groundwater sampling are tabulated and compared to criteria in Attachment 5. Laboratory reports for PFAS samples are presented in the previously referenced reports. VOC laboratory reports are included in Attachments 2 and 3.

5.0 SPECIAL TERMS AND CONDITIONS

Information obtained for this BEA is only relevant as of the date of the Phase I ESA and for the date and locations of sampling. The information contained herein is only valid as of the date of the report and may require revisions to reflect updated records or subsequent site visits.

This report is not a comprehensive site characterization and should not be construed as such. The absence of significant indicators suggesting that hazardous substances or petroleum products have impacted the Property does not preclude their presence. Therefore, this report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of this BEA is made, either expressed or implied, in any correspondence, consultation, or within the content of this report. Additionally, other hazardous substances may be present on the Property that were not evaluated as part of this BEA.

It is possible that, even with conformance to the process requirements of Phase I and Phase II ESAs, conditions could exist on or near the Property that could not be identified within the scope of the assignment or not reasonably identifiable from readily available information.

This report is only intended to assist the user in making a reasonable assessment of risk with respect to potential environmental impact at the Property. The information given in this report is based upon a review of documents and information reasonably available concerning the Property, as presented. Portions of this assessment are based upon information that has been reported by persons claiming to have knowledge of the Property. No warranty, either expressed or implied, is made as to the reliability or accuracy of the information obtained from outside sources.

6.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

We declare that, to the best of our professional knowledge and belief, we meet the definition of an environmental professional as defined in §312.10 of 40 CFR Part 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property.

Prepared by:

Reviewed by:

Max R. Korndorfer
Staff Geologist
mrkorndorfer@goslingczubak.com

Adam Segerlind, PE
Project Manager
aesegerlind@goslingczubak.com

7.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

Mr. Max R. Korndorfer received his Bachelor of Science Degree in Geology, with an Environmental emphasis, in 2017 from Grand Valley State University in Allendale, MI. Mr. Korndorfer has performed numerous Phase I and II Environmental Site Assessments as well as other environmental due diligence tasks such as Environmental Transaction Screens and Records Search and Risk Assessments. He has a working knowledge of current environmental regulations as well as the necessary skills to complete field reconnaissance, testing, data recovery, monitoring, site recording, and mapping. Mr. Korndorfer has completed HAZWOPER (40-Hour) training.

Mr. Adam Segerlind is a professional engineer with over 20 years of experience in environmental consulting. He is a registered professional engineer in the State of Michigan. Mr. Segerlind has performed Environmental Site Assessments for municipal, commercial, industrial, and private clients throughout Michigan. In addition to performing environmental site assessments, Mr. Segerlind prepares hydrogeological work plans, performs hydrogeological and remedial investigations, evaluates remedial alternatives, and prepares and implements corrective action plans for sites of environmental contamination.

8.0 PHASE I ESA REPORT

An abridged version of the Phase I ESA report for the Facility is included in Attachment 6. The environmental database search results have been removed from the document as requested on EGLE Form EQP4025.

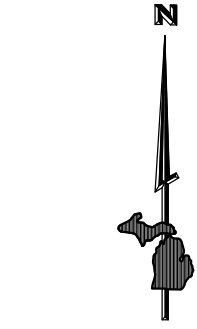
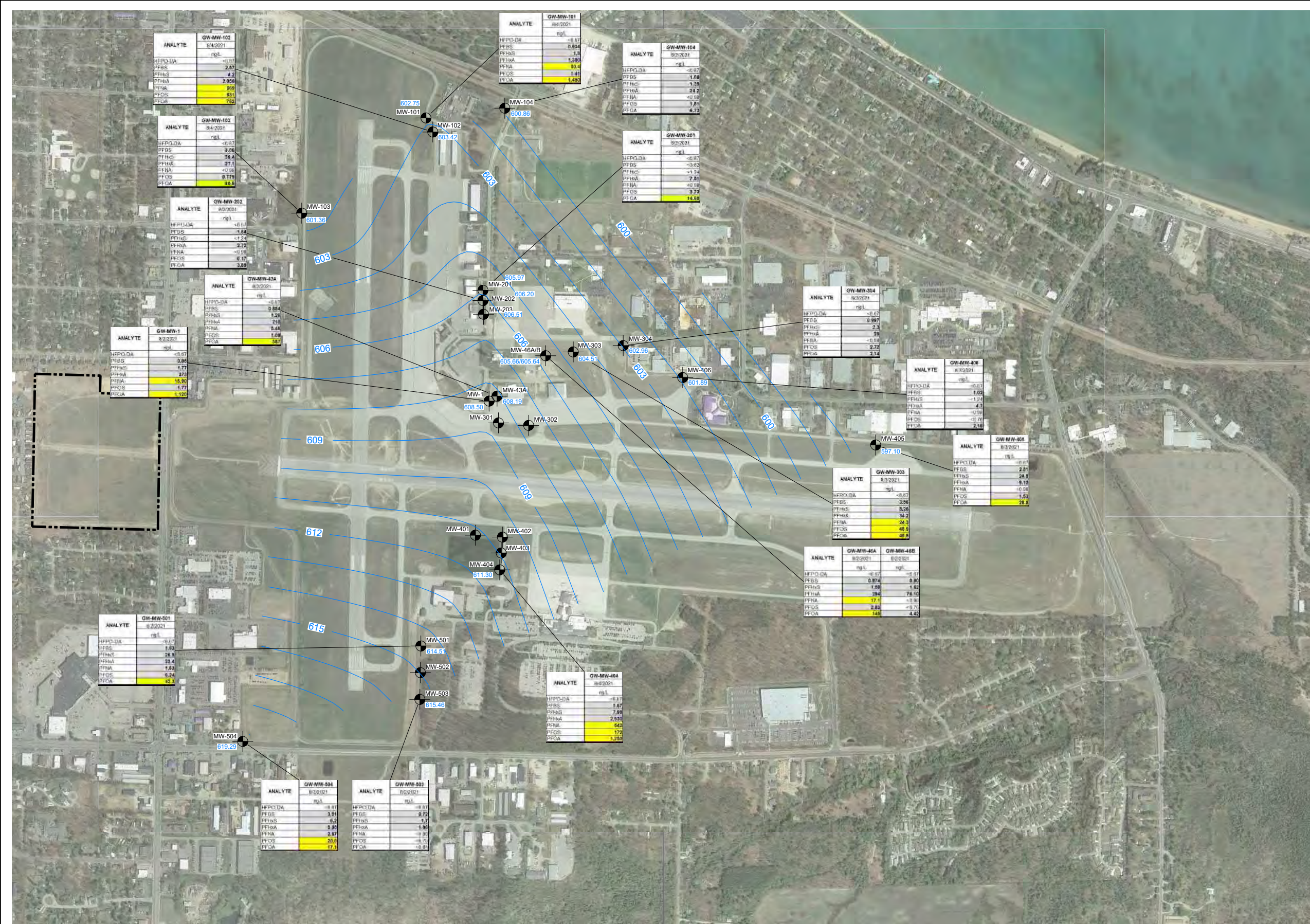
Attachment 1

PFAS Sampling Results Figures

No.	Date	Revision	By

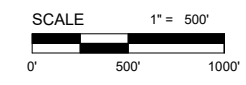
**GROUNDWATER CONTOURS - AUGUST 2021
 PFAS ASSESSMENT
 CHERRY CAPITAL AIRPORT (TVC)**

Date Issued: 06/01/2021
 Date Surveyed:
 Designed By:
 Drawn By: j1
 Checked By: AES
 Scale: 1" = 500'
 Original sheet size is 22x34
 Location:
 T 27 N, R 10 W & T 27 N, R 11 W,
 GARFIELD & EATS BAY TOWNSHIP,
 CITY OF TRAVERSE CITY,
 GRAND TRAVERSE COUNTY,
 MICHIGAN
 Project Number:
 2020630002.05
 Sheet:
1



LEGEND

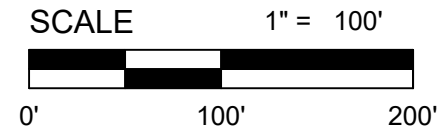
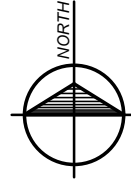
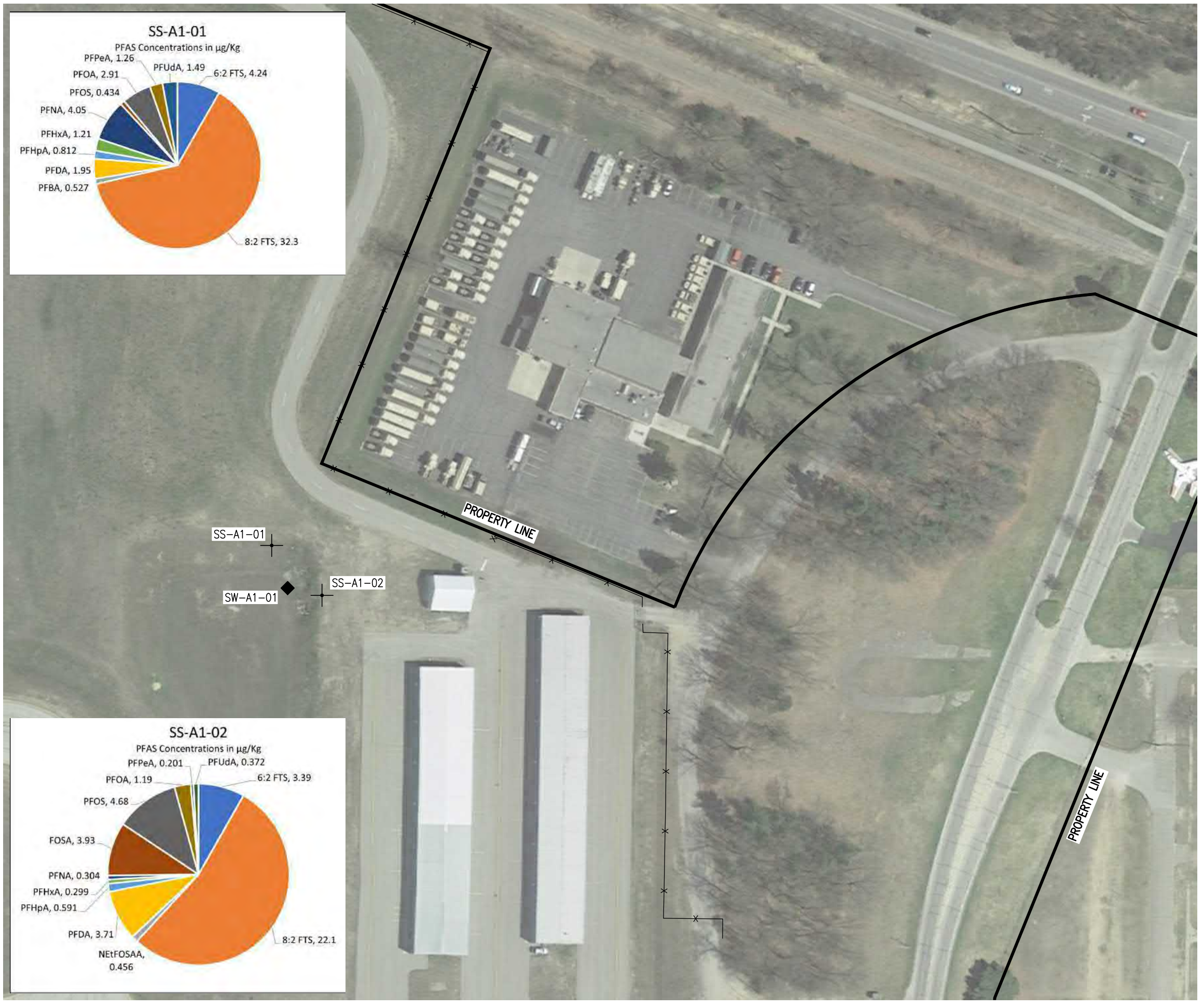
- GROUNDWATER MONITORING WELL
- GROUNDWATER POTENTIOMETRIC SURFACE, AUG. 2021. CONTOUR INTERVAL IS 1 FOOT
- GROUNDWATER ELEVATION IN FEET, BASED ON NAVD83
- APPARENT GROUNDWATER FLOW DIRECTION



NOTES: The analytes listed have an EGLE Residential Drinking Water Criteria.
 The analytes are acronym designations for PFAS (per- and poly- fluoroalkyl substances).
 Analysis was by EPA Method 537 Modified Isotope Dilution.
 Grey shaded values are above the laboratory detection limit.
 Yellow highlighted values exceed residential drinking water criteria.
 The detection limit follows the less-than symbol.

ANALYTE	Residential Drinking Water Criteria (12/21/2020) ng/L
HFPO-DA	370
Perfluorobutanesulfonic acid (PFBS)	420
Perfluorohexanesulfonic acid (PFHxS)	51
Perfluorohexanoic acid (PFHxA)	400,000
Perfluorononanoic acid (PFNA)	6
Perfluorooctanesulfonic acid (PFOS)	16
Perfluorooctanoic acid (PFOA)	8

P:\2020630002.00\CAD\3D\2020630002.TVC.PFAS.BASE.MAP.dwg Tab: 11x17 Area 1 soil Saved by: jlumley 12/3/2020 3:37 PM Plotted by: Jim Lumley 12/3/2020 3:41 PM



- LEGEND**
- SOIL SAMPLE
 - SURFACE WATER SAMPLE
 - FENCE

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engineering sciences, inc.
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231.946.9191 800.968.1062
www.goslingczubak.com info@goslingczubak.com

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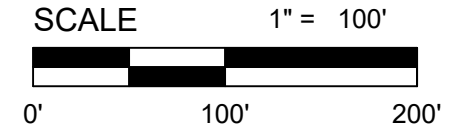
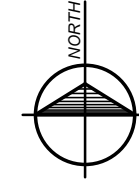
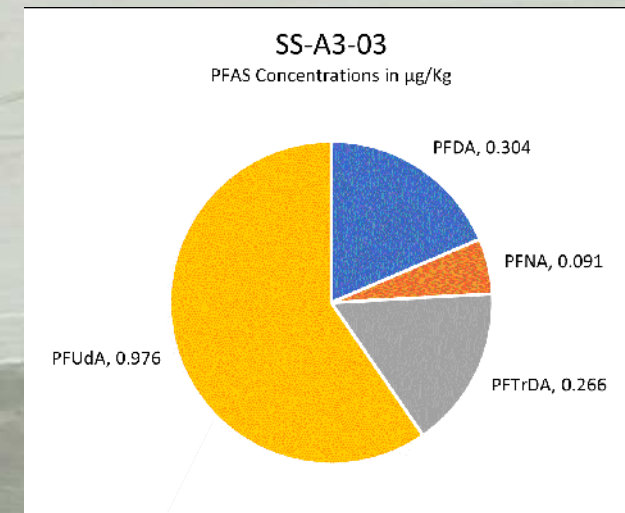
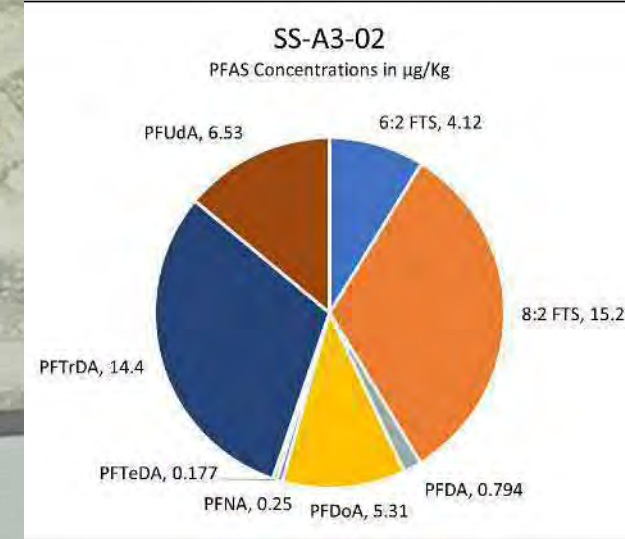
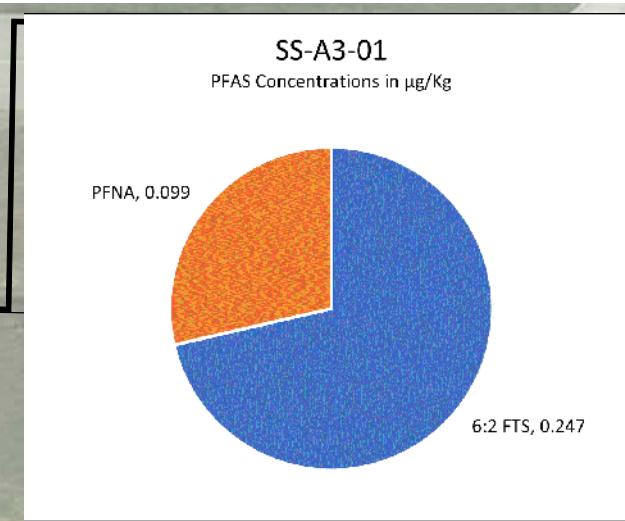
Job #:	2020630002.00
Date:	12/01/2020
Scale:	1" = 100'
Drawn:	ADB/jrl
Chk'd:	AES
Rev:	12/03/2020

**Area #1 Soil Sample Locations
Cherry Capital Airport PFAS Assessment
Northwestern Regional Airport Commission**

Location:
PART OF SECTION 12,
T 27 N, R 11 W,
GARFIELD TOWNSHIP,
GRAND TRAVERSE COUNTY, MICHIGAN
Sheet 1 of 1

THIS SKETCH IS INTENDED TO SHOW THE APPROXIMATE SAMPLE LOCATIONS WITH RESPECT TO BUILDINGS AND OTHER SITE FEATURES. THE SAMPLE LOCATION SKETCH SHOULD NOT BE USED TO DETERMINE LOCATIONS OF UTILITIES, BUILDING ELEMENTS, TOPOGRAPHY, OR OTHER PROPOSED OR EXISTING FEATURES OF THE SITE. THIS SITE SKETCH IS FROM GOOGLE AERIAL IMAGERY. THIS SITE WAS NOT SURVEYED BY GCES. PROPERTY LINES & FENCE LINES WERE PROVIDED BY PREIN & NEWHOF.

P:\2020630002.00\CAD-D-Data\IC3D\2020630002.TVC.PFAS.BASE.MAP.dwg Tab: 11x17 Area 3 soil Saved by: jlumley 12/3/2020 3:37 PM Plotted by: Jim Lumley 12/3/2020 3:42 PM



LEGEND

- SOIL SAMPLE
- SURFACE WATER SAMPLE
- FENCE

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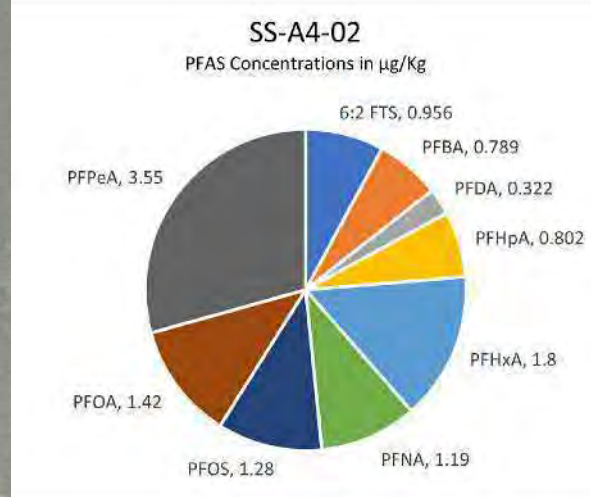
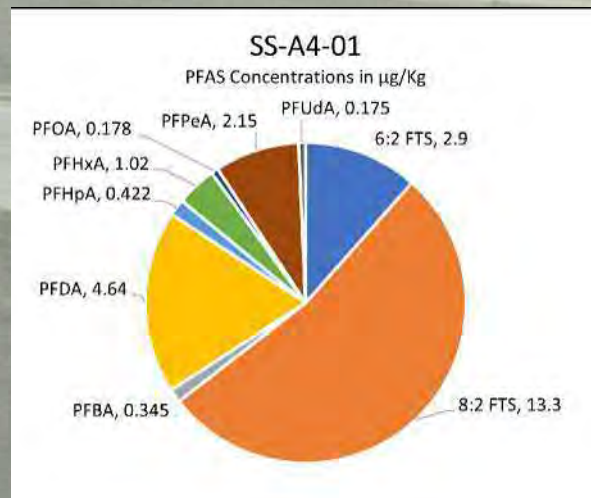
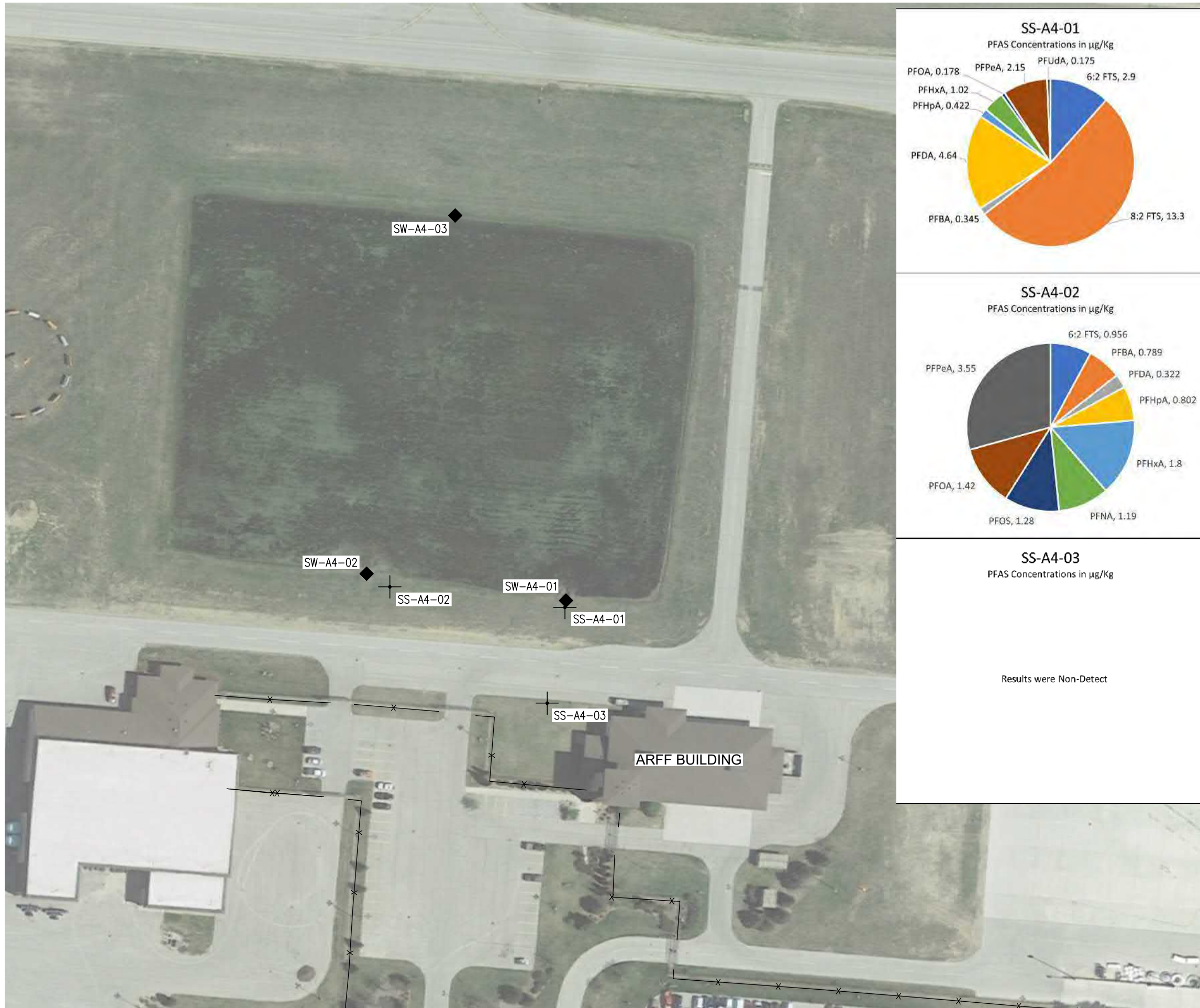
CIVIL ENGINEERING | SURVEYING | ENVIRONMENTAL SERVICES | GEOTECHNICAL
 CONSTRUCTION SERVICES | DRILLING | LANDSCAPE ARCHITECTURE

Job #:	2020630002.00
Date:	12/01/2020
Scale:	1" = 100'
Drawn:	ADB/jrl
Chk'd:	AES
Rev:	12/03/2020

**Area #3 Soil Sample Locations
 Cherry Capital Airport PFAS Assessment
 Northwestern Regional Airport Commission**

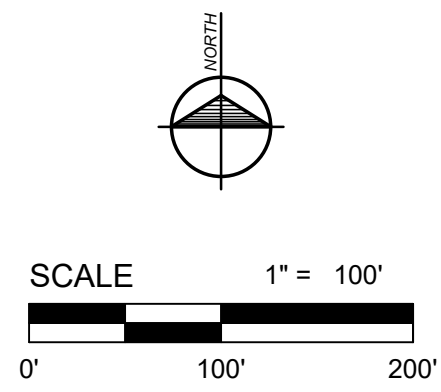
Location:
 PART OF SECTION 12,
 T 27 N, R 11 W,
 GARFIELD TOWNSHIP,
 GRAND TRAVERSE COUNTY, MICHIGAN
 Sheet 1 of 1

THIS SKETCH IS INTENDED TO SHOW THE APPROXIMATE SAMPLE LOCATIONS WITH RESPECT TO BUILDINGS AND OTHER SITE FEATURES. THE SAMPLE LOCATION SKETCH SHOULD NOT BE USED TO DETERMINE LOCATIONS OF UTILITIES, BUILDING ELEMENTS, TOPOGRAPHY, OR OTHER PROPOSED OR EXISTING FEATURES OF THE SITE. THIS SITE SKETCH IS FROM GOOGLE AERIAL IMAGERY. THIS SITE WAS NOT SURVEYED BY GCES. PROPERTY LINES & FENCE LINES WERE PROVIDED BY PREIN & NEWHOF.



SS-A4-03
PFAS Concentrations in µg/Kg

Results were Non-Detect



- LEGEND**
- SOIL SAMPLE
 - SURFACE WATER SAMPLE
 - FENCE

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CIVIL ENGINEERING | SURVEYING | ENVIRONMENTAL SERVICES | GEOTECHNICAL
CONSTRUCTION SERVICES | DRILLING | LANDSCAPE ARCHITECTURE

Job #: 2020630002.00
Date: 12/01/2020
Scale: 1" = 100'
Drawn: ADB/jrl
Chk'd: AES
Rev: 12/03/2020

Area #4 Soil Sample Locations
Cherry Capital Airport PFAS Assessment
Northwestern Regional Airport Commission

Location:
PART OF SECTION 12,
T 27 N, R 11 W,
GARFIELD TOWNSHIP,
GRAND TRAVERSE COUNTY, MICHIGAN
Sheet 1 of 1

THIS SKETCH IS INTENDED TO SHOW THE APPROXIMATE SAMPLE LOCATIONS WITH RESPECT TO BUILDINGS AND OTHER SITE FEATURES. THE SAMPLE LOCATION SKETCH SHOULD NOT BE USED TO DETERMINE LOCATIONS OF UTILITIES, BUILDING ELEMENTS, TOPOGRAPHY, OR OTHER PROPOSED OR EXISTING FEATURES OF THE SITE. THIS SITE SKETCH IS FROM GOOGLE AERIAL IMAGERY. THIS SITE WAS NOT SURVEYED BY GCES. PROPERTY LINES & FENCE LINES WERE PROVIDED BY PREIN & NEWHOE.

Attachment 2

Soil VOC Assessment Information

Soil Boring Location Sketch



P:\2015630.01\CADD-Data\201500063001 base.dwg, Tab: site Saved by: aesegeflind 11/17/2021 2:51 PM Plotted by: Adam Segerflind, P.E. 11/17/2021 2:52 PM

Sheet 1 of 1

Northwest Regional Airport Commission
Cherry Capital Airport
 PART OF SECTION 13, T 27 N, R 11 W,
 CITY OF TRAVERSE CITY,
 GRAND TRAVERSE COUNTY, MICHIGAN

Job #: 2015000630.01
 Date: 08/06/2020
 Scale: 1" = 20'
 Drawn: jrl
 Chk'd.: MGR
 Rev.:



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 CONSTRUCTION SERVICES | DRILLING | LANDSCAPE ARCHITECTURE



PROJECT: Cherry Capital Airport LUST Closure

PROJECT NO.: 2015000630.01

PROJECT LOCATION: Sec. 13, T27N, R11W, Grand Traverse County,

CLIENT: Northwest Regional Airport Commission

DRILLING COMPANY: Gosling Czubak Engineering Sciences, Inc.

DRILLER: R. Farve **RIG:** CME 55LC

LOG OF BORING: SB-107

LOGGED BY: M. Rankens **DATE:** 08-04-2020

DRILLING METHOD: 4.25-inch (ID) Hollow-Stem Auger

BOREHOLE DIAMETER (IN): +/-10 **TOTAL DEPTH:** 17

STATIC WATER LEVEL: ∇ 8.5 **CAVING DEPTH:** C 8.5

GROUND ELEVATION: NA

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Graphic	Description (See Boring Log Key)	Sample Type	Sample No.	Blow Counts	Lab ID	TEST RESULTS							
							Total BTEX- (ppb)	PID - Δ (ppm)						
								10	20	40	100	300	1000	3000
0	Asphalt	Asphalt - (two layers 9-inches total) 4-inches and 5-inches		CM1										
0.75	Sub base	Sub base - gravel and sand - 9-inches		PH1										
1.25	Sand	Fine to medium SAND - trace fine gravel - reddish brown												
3.5	Sand	Fine to medium SAND - trace fine gravel - brown		SS1										
4	Sand	Fine to medium SAND - trace fine gravel - brown		SS2										
7	Sand	Fine to medium SAND - trace fine gravel - brown		SS3										
9	Sand	Fine to medium SAND - with fine gravel - brown - wet at 8.5-ft bgs		SS4										
10.5	Sand	Fine to medium SAND - with fine gravel - brown - wet at 8.5-ft bgs		SS5										
14	Sand	Fine to medium SAND - with fine gravel - brown - wet at 8.5-ft bgs		SS6		Oil in soil-NEG(14')								
17.5		Boring terminated at 17 ft.		SS7										

SB-107 was completed with a track mounted drill rig advancing hollow-stem augers & collecting soil samples via stainless steel split spoon sampler. Removed asphalt w/core machine, hand cleared w/post hole digger, then soil samples were collected & boring was backfilled w/native cuttings from collapse to 3-inch bgs & completed to grade w/asphalt cold patch.



PROJECT: Cherry Capital Airport LUST Closure

PROJECT NO.: 2015000630.01

PROJECT LOCATION: Sec. 13, T27N, R11W, Grand Traverse County,

CLIENT: Northwest Regional Airport Commission

DRILLING COMPANY: Gosling Czubak Engineering Sciences, Inc.

DRILLER: R. Farve **RIG:** CME 55LC

LOG OF BORING: SB-108

LOGGED BY: M. Rankens **DATE:** 08-04-2020

DRILLING METHOD: 4.25-inch (ID) Hollow-Stem Auger

BOREHOLE DIAMETER (IN): +/-10 **TOTAL DEPTH:** 17

STATIC WATER LEVEL: ∇ 8.5 **CAVING DEPTH:** C 8.5

GROUND ELEVATION: NA

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Graphic	Description (See Boring Log Key)	Sample Type	Sample No.	Blow Counts	Lab ID	TEST RESULTS							
							Total BTEX- (ppb)	PID - Δ (ppm)						
								10	20	40	100	300	1000	3000
0	Asphalt	Asphalt - 8-inches		CM1										
0.66	Sub base	Sub base - gravel and sand - 10-inches												
1.5	Fine to medium SAND	Fine to medium SAND - trace fine gravel - reddish brown		PH1										
3.5	Fine to medium SAND	Fine to medium SAND - trace fine gravel - brown - wet at 8.5-ft bgs 3-inches Fine Gravel at 12.5-ft bgs		SS1										
				SS2										
				SS3										
				SS4										
				SS5										
				SS6										
				SS7										
16	Fine to medium SAND	Fine to medium SAND - gray/brown - wet												
17.5		Boring terminated at 17 ft.												

SB-108 was completed with a track mounted drill rig advancing hollow-stem augers & collecting soil samples via stainless steel split spoon sampler. Removed asphalt w/core machine, hand cleared w/post hole digger, then soil samples were collected & boring was backfilled w/native cuttings from collapse to 3-inch bgs & completed to grade w/asphalt cold patch.



PROJECT: Cherry Capital Airport LUST Closure

PROJECT NO.: 2015000630.01

PROJECT LOCATION: Sec. 13, T27N, R11W, Grand Traverse County,

CLIENT: Northwest Regional Airport Commission

DRILLING COMPANY: Gosling Czubak Engineering Sciences, Inc.

DRILLER: R. Farve **RIG:** CME 55LC

LOG OF BORING: SB-109

LOGGED BY: M. Rankens **DATE:** 08-04-2020

DRILLING METHOD: 4.25-inch (ID) Hollow-Stem Auger

BOREHOLE DIAMETER (IN): +/-10 **TOTAL DEPTH:** 17

STATIC WATER LEVEL: ∇ 8.5 **CAVING DEPTH:** C 8.5

GROUND ELEVATION: NA

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Graphic	Description (See Boring Log Key)	Sample Type	Sample No.	Blow Counts	Lab ID	TEST RESULTS							
							Total BTEX- (ppb)	PID - Δ (ppm)						
								10	20	40	100	300	1000	3000
0		Asphalt - 4-inches		CM1										
0.33		Sub base - gravel and sand - 6-inches												
0.83		Fine to medium SAND - reddish brown		PH1										
3		Fine to medium SAND - trace fine gravel - brown - wet at 8.5-ft bgs		SS1										
3.5				SS2										
7				SS3										
10.5				SS4										
11		Fine to medium SAND - with fine gravel - brown - wet		SS5										
14		3-inches Fine Gravel @ 12.5-ft bgs		SS6										
14		3-inches Fine Gravel @ 16.5-ft bgs		SS7										
17.5		Boring terminated at 17 ft.												

SB-109 (14')
Oil in soil-POS(14')

SB-109 was completed with a track mounted drill rig advancing hollow-stem augers & collecting soil samples via stainless steel split spoon sampler. Removed asphalt w/core machine, hand cleared w/post hole digger, then soil samples were collected & boring was backfilled w/native cuttings from collapse to 3-inch bgs & completed to grade w/asphalt cold patch.



PROJECT: Cherry Capital Airport LUST Closure

PROJECT NO.: 2015000630.01

PROJECT LOCATION: Sec. 13, T27N, R11W, Grand Traverse County,

CLIENT: Northwest Regional Airport Commission

DRILLING COMPANY: Gosling Czubak Engineering Sciences, Inc.

DRILLER: R. Farve **RIG:** CME 55LC

LOG OF BORING: SB-110

LOGGED BY: M. Rankens **DATE:** 08-04-2020

DRILLING METHOD: 4.25-inch (ID) Hollow-Stem Auger

BOREHOLE DIAMETER (IN): +/-10 **TOTAL DEPTH:** 17

STATIC WATER LEVEL: ∇ 8.5 **CAVING DEPTH:** C 8.5

GROUND ELEVATION: NA

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Graphic	Description (See Boring Log Key)	Sample Type	Sample No.	Blow Counts	Lab ID	TEST RESULTS							
							Total BTEX- (ppb)	PID - Δ (ppm)						
								10	20	40	100	300	1000	3000
0		Asphalt - 4-inches		CM1										
0.33		Sub base - gravel and sand - 6-inches												
0.83		Fine to medium SAND - reddish brown		PH1										
3.5		Fine to medium SAND - trace fine gravel - brown - wet at 8.5-ft bgs		SS1										
				SS2										
				SS3										
				SS4										
10.5		Fine to medium SAND - with fine gravel - brown - wet 1-ft Grayish color @ 13-ft bgs		SS5										
				SS6		Oil in soil-NEG(14')								
				SS7										
17.5		Boring terminated at 17 ft.												

SB-110 was completed with a track mounted drill rig advancing hollow-stem augers & collecting soil samples via stainless steel split spoon sampler. Removed asphalt w/core machine, hand cleared w/post hole digger, then soil samples were collected & boring was backfilled w/native cuttings from collapse to 3-inch bgs & completed to grade w/asphalt cold patch.



PROJECT: Cherry Capital Airport LUST Closure

PROJECT NO.: 2015000630.01

PROJECT LOCATION: Sec. 13, T27N, R11W, Grand Traverse County,

CLIENT: Northwest Regional Airport Commission

DRILLING COMPANY: Gosling Czubak Engineering Sciences, Inc.

DRILLER: R. Farve **RIG:** CME 55LC

LOG OF BORING: SB-111

LOGGED BY: M. Rankens **DATE:** 08-04-2020

DRILLING METHOD: 4.25-inch (ID) Hollow-Stem Auger

BOREHOLE DIAMETER (IN): +/-10 **TOTAL DEPTH:** 17

STATIC WATER LEVEL: 8.5 **CAVING DEPTH:** C 8.5

GROUND ELEVATION: NA

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Graphic	Description (See Boring Log Key)	Sample Type	Sample No.	Blow Counts	Lab ID	TEST RESULTS							
							Total BTEX- (ppb)	PID - Δ (ppm)						
								10	20	40	100	300	1000	3000
0		Asphalt - 6-inches		CM1										
0.5		Sub base - gravel and sand - 3-inches												
0.75		Asphalt - 5-inches		PH1										
1.16		Fine to medium SAND - trace fine gravel - reddish brown												
3.5		Fine to medium SAND - trace fine gravel - brown - wet at 8.5-ft bgs		SS1										
4				SS2										
7				SS3										
10.5				SS4										
13				SS5										
14		Fine to medium SAND - with fine gravel - brown - wet 1-ft Grayish color @ 16-ft bgs		SS6		Oil in soil-NEG(14')								
17.5		Boring terminated at 17 ft.		SS7										

SB-111 was completed with a track mounted drill rig advancing hollow-stem augers & collecting soil samples via stainless steel split spoon sampler. Removed asphalt w/core machine, hand cleared w/post hole digger, then soil samples were collected & boring was backfilled w/native cuttings from collapse to 3-inch bgs & completed to grade w/asphalt cold patch.



PROJECT: Cherry Capital Airport LUST Closure

PROJECT NO.: 2015000630.01

PROJECT LOCATION: Sec. 13, T27N, R11W, Grand Traverse County,

CLIENT: Northwest Regional Airport Commission

DRILLING COMPANY: Gosling Czubak Engineering Sciences, Inc.

DRILLER: R. Farve **RIG:** Post Hole Digger

LOG OF BORING: SB-112

LOGGED BY: M. Rankens **DATE:** 08-04-2020

DRILLING METHOD: Post Hole Digger

BOREHOLE DIAMETER (IN): +/-12 **TOTAL DEPTH:** 2

STATIC WATER LEVEL: N/A **CAVING DEPTH:** C

GROUND ELEVATION: NA

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Graphic	Description (See Boring Log Key)	Sample Type	Sample No.	Blow Counts	Lab ID	TEST RESULTS								
							Total BTEX- (ppb)	PID - Δ (ppm)							
								10	20	40	100	300	1000	3000	
0		Asphalt - 6-inches		CM1		SB-112 (2')									
0.5		Sub base - gravel and sand - 6-inches		PH1											
1		SILTY SAND and fine gravel - gray Boring terminated at 2 ft.													
3.5															
7															
10.5															
14															
17.5															
21															

SB-112 was completed with a post hole digger. Removed asphalt w/core machine, hand cleared w/post hole digger, encountered soil at 2-ft that had high PID reading. Collected soil sample & boring was backfilled w/native cuttings from total depth to 3-inch bgs & completed to grade w/asphalt cold patch. Offset to the east for the next boring.



PROJECT: Cherry Capital Airport LUST Closure

PROJECT NO.: 2015000630.01

PROJECT LOCATION: Sec. 13, T27N, R11W, Grand Traverse County,

CLIENT: Northwest Regional Airport Commission

DRILLING COMPANY: Gosling Czubak Engineering Sciences, Inc.

DRILLER: R. Farve **RIG:** CME 55LC

LOG OF BORING: SB-113

LOGGED BY: M. Rankens **DATE:** 08-04-2020

DRILLING METHOD: 4.25-inch (ID) Hollow-Stem Auger

BOREHOLE DIAMETER (IN): +/-10 **TOTAL DEPTH:** 19

STATIC WATER LEVEL: ∇ 8.5 **CAVING DEPTH:** C 8.5

GROUND ELEVATION: NA

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Graphic	Description (See Boring Log Key)	Sample Type	Sample No.	Blow Counts	Lab ID	TEST RESULTS						
							Total BTEX- (ppb)	PID - Δ (ppm)					
							10	20	40	100	300	1000	3000
0		Asphalt - 7-inches		CM1									
0.58		Sub base - gravel and sand - 5-inches											
1		Fine to medium SAND - reddish brown		PH1									
1.5		Fine to medium SAND and fine gravel - brown											
2.5		Fine to medium SAND - reddish brown		SS1									
4		Fine to medium SAND - trace fine gravel - brown - wet at 8.5-ft bgs		SS2									
7				SS3									
10.5				SS4									
11		Fine to medium SAND - with fine gravel - brown - wet		SS5									
14		6-in Grayish color @ 14.5-ft bgs		SS6									
14		1-ft Grayish color @ 16-ft bgs		SS7		Oil in soil-POS(16')							
17.5				SS8		SB-113 (18')							
18						Oil in soil - (18')							
19		Boring terminated at 19 ft.											

SB-113 was completed with a track mounted drill rig advancing hollow-stem augers & collecting soil samples via stainless steel split spoon sampler. Removed asphalt w/core machine, hand cleared w/post hole digger, then soil samples were collected & boring was backfilled w/native cuttings from collapse to 3-inch bgs & completed to grade w/asphalt cold patch.



PROJECT: Cherry Capital Airport LUST Closure

PROJECT NO.: 2015000630.01

PROJECT LOCATION: Sec. 13, T27N, R11W, Grand Traverse County,

CLIENT: Northwest Regional Airport Commission

DRILLING COMPANY: Gosling Czubak Engineering Sciences, Inc.

DRILLER: R. Farve **RIG:** CME 55LC

LOG OF BORING: SB-114

LOGGED BY: M. Rankens **DATE:** 08-05-2020

DRILLING METHOD: 4.25-inch (ID) Hollow-Stem Auger

BOREHOLE DIAMETER (IN): +/-10 **TOTAL DEPTH:** 19

STATIC WATER LEVEL: 8.5 **CAVING DEPTH:** C 8.5

GROUND ELEVATION: NA

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Graphic	Description (See Boring Log Key)	Sample Type	Sample No.	Blow Counts	Lab ID	TEST RESULTS							
							Total BTEX- (ppb)	PID - Δ (ppm)						
								10	20	40	100	300	1000	3000
0		Sandy TOPSOIL - trace fine gravel - dark brown/black												
0.5		Fine to medium SAND - trace fine gravel - reddish brown		PH1										
3		Fine to medium SAND - trace fine gravel - brown		SS1										
3.5				SS2										
7				SS3										
10.5				SS4										
11		Fine to medium SAND - with fine gravel - brown - wet at 8.5'-ft bgs		SS5										
14		Fine to medium SAND - trace fine gravel - brown - wet 6-in Grayish color @ 14-ft bgs 2-ft Grayish color @ 15-ft bgs		SS6		Oil in soil-POS(14')							1251+	
14				SS7		Oil in soil-POS(16')							1643+	
17.5				SS8		Oil in soil-NEG(18')								
19		Boring terminated at 19 ft.												

SB-114 was completed with a track mounted drill rig advancing hollow-stem augers & collecting soil samples via stainless steel split spoon sampler. Hand cleared w/post hole digger, then soil samples were collected & boring was backfilled w/ native cuttings from collapse to 4-ft, followed by bentonite chips from 4-ft to 3-ft and completed with native cuttings to grade.



PROJECT: Cherry Capital Airport LUST Closure
PROJECT NO.: 2015000630.01
PROJECT LOCATION: Sec. 13, T27N, R11W, Grand Traverse County,
CLIENT: Northwest Regional Airport Commission
DRILLING COMPANY: Gosling Czubak Engineering Sciences, Inc.
DRILLER: R. Farve **RIG:** CME 55LC

LOG OF BORING: SB-115
LOGGED BY: M. Rankens **DATE:** 08-05-2020
DRILLING METHOD: 4.25-inch (ID) Hollow-Stem Auger
BOREHOLE DIAMETER (IN): +/-10 **TOTAL DEPTH:** 19
STATIC WATER LEVEL: ∇ 8.5 **CAVING DEPTH:** C 8.5
GROUND ELEVATION: NA

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Graphic	Description (See Boring Log Key)	Sample Type	Sample No.	Blow Counts	Lab ID	TEST RESULTS							
							Total BTEX- (ppb)	PID - Δ (ppm)						
								10	20	40	100	300	1000	3000
0		Sandy TOPSOIL - trace fine gravel - dark brown												
0.5		Fine to medium SAND - trace fine gravel - reddish brown		PH1										
2.5		Fine to medium SAND - trace fine gravel - brown												
3.5				SS1										
7				SS2										
				SS3										
10.5		Fine to medium SAND - with fine gravel - brown - wet at 8.5'-ft bgs 1-ft Grayish color @ 14-ft bgs		SS4										
				SS5										
14				SS6		Oil in soil-POS(14')							1010+	
15		Fine to medium SAND - trace fine gravel - brown - wet		SS7										
17.5						SB-115 (16') Oil in soil-POS(16')								1643+
		Boring terminated at 19 ft.												
21														

SB-115 was completed with a track mounted drill rig advancing hollow-stem augers & collecting soil samples via stainless steel split spoon sampler. Hand cleared w/post hole digger, then soil samples were collected & boring was backfilled w/ native cuttings from collapse to 4-ft, followed by bentonite chips from 4-ft to 3-ft and completed with native cuttings to grade.



PROJECT: Cherry Capital Airport LUST Closure

PROJECT NO.: 2015000630.01

PROJECT LOCATION: Sec. 13, T27N, R11W, Grand Traverse County,

CLIENT: Northwest Regional Airport Commission

DRILLING COMPANY: Gosling Czubak Engineering Sciences, Inc.

DRILLER: R. Farve **RIG:** CME 55LC

LOG OF BORING: SB-116

LOGGED BY: M. Rankens **DATE:** 08-05-2020

DRILLING METHOD: 4.25-inch (ID) Hollow-Stem Auger

BOREHOLE DIAMETER (IN): +/-10 **TOTAL DEPTH:** 17

STATIC WATER LEVEL: ∇ 8.5 **CAVING DEPTH:** C 8.5

GROUND ELEVATION: NA

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Graphic	Description (See Boring Log Key)	Sample Type	Sample No.	Blow Counts	Lab ID	TEST RESULTS							
							Total BTEX- (ppb)	PID - Δ (ppm)						
								10	20	40	100	300	1000	3000
0		Sandy TOPSOIL - trace fine gravel - dark brown												
0.5		Fine to medium SAND - trace fine gravel - reddish brown		PH1										
2.5		Fine to medium SAND - trace fine gravel - brown - wet at 8.5'-ft bgs												
3.5				SS1										
7				SS2										
10.5		Fine to medium SAND - with fine gravel - brown - wet		SS4		SB-116 (7.5')								
14				SS5										
15				SS6		Oil in soil-NEG(14')								
15		Fine to medium SAND - trace fine gravel - brown - wet		SS7										
17.5		Boring terminated at 17 ft.												
21														

SB-116 was completed with a track mounted drill rig advancing hollow-stem augers & collecting soil samples via stainless steel split spoon sampler. Hand cleared w/post hole digger, then soil samples were collected & boring was backfilled w/ native cuttings from collapse to 4-ft, followed by bentonite chips from 4-ft to 3-ft and completed with native cuttings to grade.



PROJECT: Cherry Capital Airport LUST Closure

PROJECT NO.: 2015000630.01

PROJECT LOCATION: Sec. 13, T27N, R11W, Grand Traverse County,

CLIENT: Northwest Regional Airport Commission

DRILLING COMPANY: Gosling Czubak Engineering Sciences, Inc.

DRILLER: R. Farve **RIG:** CME 55LC

LOG OF BORING: SB-117

LOGGED BY: M. Rankens **DATE:** 08-05-2020

DRILLING METHOD: 4.25-inch (ID) Hollow-Stem Auger

BOREHOLE DIAMETER (IN): +/-10 **TOTAL DEPTH:** 17

STATIC WATER LEVEL: ∇ 8.5 **CAVING DEPTH:** C 8.5

GROUND ELEVATION: NA

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Depth (feet)	Graphic	Description (See Boring Log Key)	Sample Type	Sample No.	Blow Counts	Lab ID	TEST RESULTS							
							Total BTEX- (ppb)	PID - Δ (ppm)						
								10	20	40	100	300	1000	3000
0	[Cross-hatched pattern]	Asphalt - 2-inches		CM1										
0.16	[Dotted pattern]	Sub base - gravel and sand - 10-inches												
1	[Dotted pattern]	Fine to medium SAND - trace fine gravel - reddish brown		PH1										
2	[Dotted pattern]	Fine to medium SAND - trace fine gravel - light brown - wet at 8.5-ft bgs												
3.5	[Dotted pattern]			SS1										
7	[Dotted pattern]			SS2										
10.5	[Dotted pattern]	Fine to medium SAND - with fine gravel - brown - wet		SS4										
14	[Dotted pattern]	Fine to medium SAND - brown - wet		SS6		Oil in soil-NEG(14')								
17.5	[Dotted pattern]	Boring terminated at 17 ft.		SS7										

SB-117 was completed with a track mounted drill rig advancing hollow-stem augers & collecting soil samples via stainless steel split spoon sampler. Removed asphalt w/core machine, hand cleared w/post hole digger, then soil samples were collected & boring was backfilled w/native cuttings from collapse to 3-inch bgs & completed to grade w/asphalt cold patch.



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Company: NORTHWEST REGIONAL AIRPORT COMM. Site Addr: CHERRY CAPITAL LUST CLOSURE
Name:
ClientProj: 2015000630.01
GTA ProjNo: 080620-8
Sampled By: MIKE RANKENS/GCES
Date Rec: 8/6/2020
Time Rec: 1:00 PM

Sample No.	Sample ID	Date Sampled	Time Sampled	Sample Matrix
1	SB-108 (7.25')	8/4/2020	10:30 AM	SOIL
2	SB-112 (2')	8/4/2020	3:05 PM	SOIL
3	SB-116 (7.5')	8/5/2020	11:07 AM	SOIL
4	SB-117 (7.5')	8/5/2020	12:45 PM	SOIL
5	SB-109 (14')	8/4/2020	11:40 AM	SOIL
6	SB-113 (18')	8/4/2020	4:20 PM	SOIL
7	SB-115 (16')	8/5/2020	10:20 AM	SOIL

ELECTRONIC SIGNATURE REPORT. This is a final report for the following pages of data for the samples specified above. All analysis was performed by the methods stated and all quality control measures required were completed. All quality control information is available upon request.

Kirk Chase

Kirk L. Chase/Chemist
Grand Traverse Analytical
830 Robinwood Court
Traverse City, MI 49686
Ph: 231-929-0905
Fx: 231-929-0894
SP: 231-590-0291
kirk@gtanalytical.com

COMPANY: NORTHWEST REGIONAL AIRPORT COMM. GTA PROJECT NO: 080620-8
PROJECT NO: 2015000630.01 GTA SAMPLE NO: 1
LOCATION: CHERRY CAPITAL LUST CLOSURE DATE SAMPLED: 8/4/2020
MI TIME SAMPLED: 10:30 AM
SAMPLED BY: MIKE RANKENS/GCES DATE RECEIVED: 8/6/2020
MIKE RANKENS/GCES TIME RECEIVED: 1:00 PM
SAMPLE MATRIX: SOIL SAMPLE ID: SB-108 (7.25')

**THIS SAMPLE WAS RECEIVED MEOH PRESERVED.

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date</u> <u>Extracted</u>	<u>Date</u> <u>Complete</u>	<u>Prep Method</u>
Benzene	ND	50	ug/Kg (PPB)	MR	8/4/2020	8/10/2020	EPA 5035A
Toluene	ND	50					
Ethylbenzene	ND	50					
Xylene(Total)	ND	150					
1,2,4-Trimethylbenzene	ND	50					
1,3,5-Trimethylbenzene	ND	50					
Methyl-t-Butyl Ether	ND	250					
Naphthalene	ND	250					
2-Methylnaphthalene	ND	250					
1,2-Dibromoethane	ND	20					
1,2-Dichloroethane	ND	50					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT
ND = NOT DETECTED
LOD = LIMIT OF DETECTION

COMPANY: NORTHWEST REGIONAL AIRPORT COMM. GTA PROJECT NO: 080620-8
PROJECT NO: 2015000630.01 GTA SAMPLE NO: 2
LOCATION: CHERRY CAPITAL LUST CLOSURE DATE SAMPLED: 8/4/2020
MI TIME SAMPLED: 3:05 PM
DATE RECEIVED: 8/6/2020
SAMPLED BY: MIKE RANKENS/GCES TIME RECEIVED: 1:00 PM
SAMPLE ID: SB-112 (2')
SAMPLE MATRIX: SOIL

**THIS SAMPLE WAS RECEIVED MEOH PRESERVED.

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date</u> <u>Extracted</u>	<u>Date</u> <u>Complete</u>	<u>Prep Method</u>
Benzene	ND	50	ug/Kg (PPB)	MR	8/4/2020	8/10/2020	EPA 5035A
Toluene	ND	50					
Ethylbenzene	ND	50					
Xylene(Total)	ND	150					
1,2,4-Trimethylbenzene	480	50					
1,3,5-Trimethylbenzene	1,400	50					
Methyl-t-Butyl Ether	ND	250					
Naphthalene	510	250					
2-Methylnaphthalene	3,800	250					
1,2-Dibromoethane	ND	20					
1,2-Dichloroethane	ND	50					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT
ND = NOT DETECTED
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COMPANY: NORTHWEST REGIONAL AIRPORT COMM. GTA PROJECT NO: 080620-8
PROJECT NO: 2015000630.01 GTA SAMPLE NO: 3
LOCATION: CHERRY CAPITAL LUST CLOSURE DATE SAMPLED: 8/5/2020
MI TIME SAMPLED: 11:07 AM
SAMPLED BY: MIKE RANKENS/GCES DATE RECEIVED: 8/6/2020
 TIME RECEIVED: 1:00 PM
SAMPLE MATRIX: SOIL SAMPLE ID: SB-116 (7.5')

**THIS SAMPLE WAS RECEIVED MEOH PRESERVED.

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	50	ug/Kg (PPB)	MR	8/5/2020	8/10/2020	EPA 5035A
Toluene	ND	50					
Ethylbenzene	ND	50					
Xylene(Total)	ND	150					
1,2,4-Trimethylbenzene	ND	50					
1,3,5-Trimethylbenzene	ND	50					
Methyl-t-Butyl Ether	ND	250					
Naphthalene	ND	250					
2-Methylnaphthalene	ND	250					
1,2-Dibromoethane	ND	20					
1,2-Dichloroethane	ND	50					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT
ND = NOT DETECTED
LOD = LIMIT OF DETECTION

COMPANY: NORTHWEST REGIONAL AIRPORT COMM. GTA PROJECT NO: 080620-8
PROJECT NO: 2015000630.01 GTA SAMPLE NO: 4
LOCATION: CHERRY CAPITAL LUST CLOSURE DATE SAMPLED: 8/5/2020
MI TIME SAMPLED: 12:45 PM
SAMPLED BY: MIKE RANKENS/GCES DATE RECEIVED: 8/6/2020
MIKE RANKENS/GCES TIME RECEIVED: 1:00 PM
SAMPLE MATRIX: SOIL SAMPLE ID: SB-117 (7.5')

**THIS SAMPLE WAS RECEIVED MEOH PRESERVED.

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date</u> <u>Extracted</u>	<u>Date</u> <u>Complete</u>	<u>Prep Method</u>
Benzene	ND	50	ug/Kg (PPB)	MR	8/5/2020	8/10/2020	EPA 5035A
Toluene	ND	50					
Ethylbenzene	ND	50					
Xylene(Total)	ND	150					
1,2,4-Trimethylbenzene	ND	50					
1,3,5-Trimethylbenzene	ND	50					
Methyl-t-Butyl Ether	ND	250					
Naphthalene	ND	250					
2-Methylnaphthalene	ND	250					
1,2-Dibromoethane	ND	20					
1,2-Dichloroethane	ND	50					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT
ND = NOT DETECTED
LOD = LIMIT OF DETECTION

COMPANY: NORTHWEST REGIONAL AIRPORT COMM. GTA PROJECT NO: 080620-8
GTA SAMPLE NO: 6
NAME:
PROJECT NO: 2015000630.01 DATE SAMPLED: 8/4/2020
LOCATION: CHERRY CAPITAL LUST CLOSURE TIME SAMPLED: 4:20 PM
DATE RECEIVED: 8/6/2020
TIME RECEIVED: 1:00 PM
MI
SAMPLED BY: MIKE RANKENS/GCES

ORGANICS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
SAMPLE ID:	SB-113 (18')							
SAMPLE MATRIX:	SOIL							
GASOLINE RANGE ORGANICS (GRO) EPA 8015M		ND	4.0	mg/Kg (PPM)	MR	8/4/2020	8/10/2020	EPA 5035A

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.
ND = NOT DETECTED, RESULT < LOD
LOD = LIMIT OF DETECTION



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COMPANY: NORTHWEST REGIONAL AIRPORT COMM. GTA PROJECT NO: 080620-8
GTA SAMPLE NO: 7
NAME:
PROJECT NO: 2015000630.01 DATE SAMPLED: 8/5/2020
LOCATION: CHERRY CAPITAL LUST CLOSURE TIME SAMPLED: 10:20 AM
DATE RECEIVED: 8/6/2020
TIME RECEIVED: 1:00 PM
MI
SAMPLED BY: MIKE RANKENS/GCES

ORGANICS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date</u> <u>Extracted</u>	<u>Date</u> <u>Complete</u>	<u>Prep Method</u>
SAMPLE ID:	SB-115 (16')							
SAMPLE MATRIX:	SOIL							
GASOLINE RANGE ORGANICS (GRO) EPA 8015M		150	4.0	mg/Kg (PPM)	MR	8/4/2020	8/10/2020	EPA 5035A

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.
ND = NOT DETECTED, RESULT < LOD
LOD = LIMIT OF DETECTION

COMPANY: NORTHWEST REGIONAL AIRPORT COMM. GTA PROJECT NO: 080620-8
 PROJECT NO: 2015000630.01 GTA SAMPLE NO: 1
 LOCATION: CHERRY CAPITAL LUST CLOSURE
 DATE SAMPLED: 8/4/2020
 TIME SAMPLED: 10:30 AM
 DATE RECEIVED: 8/6/2020
 TIME RECEIVED: 1:00 PM
 SAMPLED BY: MI
 MIKE RANKENS/GCES
 SAMPLE MATRIX: SOIL

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Complete</u>	<u>Digestion Method</u>
SAMPLE ID:	SB-108 (7.25')						
1	LEAD TOTAL EPA 6020A	ND	0.27	mg/Kg (PPM)	MR	8/12/2020	EPA 3050B

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED

COMPANY: NORTHWEST REGIONAL AIRPORT COMM. GTA PROJECT NO: 080620-8
 PROJECT NO: 2015000630.01 GTA SAMPLE NO: 2
 LOCATION: CHERRY CAPITAL LUST CLOSURE
 DATE SAMPLED: 8/4/2020
 TIME SAMPLED: 3:05 PM
 MI
 DATE RECEIVED: 8/6/2020
 SAMPLED BY: MIKE RANKENS/GCES TIME RECEIVED: 1:00 PM
 SAMPLE MATRIX: SOIL

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Complete</u>	<u>Digestion Method</u>
SAMPLE ID: SB-112 (2')							
2	LEAD TOTAL EPA 6020A	3.2	0.25	mg/Kg (PPM)	MR	8/12/2020	EPA 3050B

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED



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COMPANY: NORTHWEST REGIONAL AIRPORT COMM. GTA PROJECT NO: 080620-8
GTA SAMPLE NO: 3
PROJECT NO: 2015000630.01
LOCATION: CHERRY CAPITAL LUST CLOSURE
DATE SAMPLED: 8/5/2020
TIME SAMPLED: 11:07 AM
DATE RECEIVED: 8/6/2020
TIME RECEIVED: 1:00 PM
SAMPLED BY: MI
MIKE RANKENS/GCES
SAMPLE MATRIX: SOIL

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Complete</u>	<u>Digestion Method</u>
SAMPLE ID: SB-116 (7.5')							
3	LEAD TOTAL EPA 6020A	ND	0.25	mg/Kg (PPM)	MR	8/12/2020	EPA 3050B

ND = NOT DETECTED, RESULT < LOD.
LOD = LIMIT OF DETECTION
DISS = DISSOLVED



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COMPANY: NORTHWEST REGIONAL AIRPORT COMM. GTA PROJECT NO: 080620-8
 PROJECT NO: 2015000630.01 GTA SAMPLE NO: 4
 LOCATION: CHERRY CAPITAL LUST CLOSURE
 DATE SAMPLED: 8/5/2020
 TIME SAMPLED: 12:45 PM
 DATE RECEIVED: 8/6/2020
 TIME RECEIVED: 1:00 PM
 SAMPLED BY: MI
 MIKE RANKENS/GCES
 SAMPLE MATRIX: SOIL

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Complete</u>	<u>Digestion Method</u>
SAMPLE ID: SB-117 (7.5')							
4	LEAD TOTAL EPA 6020A	ND	0.20	mg/Kg (PPM)	MR	8/12/2020	EPA 3050B

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED

CHAIN OF CUSTODY

PROJECT NUMBER <i>2015000630.01</i>	SITE NAME/ADDRESS <i>Cherry Capital LUST Closure</i>	COMPANY/NAME <i>Northwest Regional Airport Comm.</i>
SAMPLED BY <i>Mike Rankens</i>	COMPANY <i>Gosling Czubak</i>	GTA PROJECT # <i>080620-B</i>

SAMPLE INFORMATION

#	SAMPLE ID	DATE SAMPLED	TIME	MATRIX	ANALYSIS
1	SB-108 (7.25')	8/4/2020	1030	Soil	BTEX + 5/1,2-Dichloroethane/ Ethylene Dibromide AND LEAD
2	SB-112 (2')	8/4/2020	1505	Soil	↓ ↓ ↓ ↓
3	SB-116 (7.5')	8/5/2020	1107	Soil	↓ ↓ ↓ ↓
4	SB-117 (7.5')	8/5/2020	1245	Soil	↓ ↓ ↓ ↓
5	SB-109 (7.5' ^{OK MAR} (14'))	8/4/2020 ^{MS}	1140	Soil	TPH - GRO
6	SB-113 (18')	8/4/2020	1620	Soil	TPH - GRO
7	SB-115 (16')	8/5/2020	1020	Soil	TPH - GRO

BILL TO:

Gosling Czubak

REPORT TO:

ADAM SEGERLIND

RELEASED BY

DATE/TIME

RECEIVED BY

DATE/TIME

Shelly J. Zeb 8/4/2020 @ 1710
GUES Cold Storage 8/5/2020 @ 0720
Shelly J. Zeb 8/5/2020 @ 1400
GUES Cold Storage 8/6/2020 @ 1200
Shelly J. Zeb 8/6/2020 @ 1300

GUES Cold Storage 8/4/2020 @ 1710
Shelly J. Zeb 8/5/2020 @ 0720
GUES Cold Storage 8/5/2020 @ 1400
Shelly J. Zeb 8/6/2020 @ 1200
Shelly J. Zeb 8/6/2020 @ 1300 rec 2009 m/c

REQUESTED TAT STANDARD 1 BUSINESS DAY 2 BUSINESS DAYS 3 BUSINESS DAYS

Attachment 3

Groundwater VOC Assessment Information



LEGEND

GROUNDWATER MONITORING WELL

CHEMICAL ANALYSES INCLUDED PART 213 UNLEADED GASOLINE PARAMETERS. GROUNDWATER ANALYSES NOT REPORTED WERE BELOW LABORATORY METHOD DETECTION LIMITS. (C) = EXCEEDS AESTHETIC CRITERIA.

606.70 = GROUNDWATER ELEVATION (ft ABOVE MSL)
GROUNDWATER CONTOUR INTERVAL = 0.25 ft

Parameter	Residential Drinking Water Aesthetic-Based Criteria	Residential Drinking Water Health-Based Criteria	Groundwater/Surface Water Interface Criteria
Benzene	NA	5	200
Toluene	750	1,000	270
Ethylbenzene	74	700	10
Xylenes	280	10,000	41
1,2,4-TMB	63	1,000	17
1,3,5-TMB	72	1,000	49
Naphthalene	NA	500	11
2-Methylnaphthalene	NA	280	19
MTBE	40	240	7,100

*** GSI Not relevant to this project ***

Gray indicates parameter was analyzed but did not exceed listed criteria.
 Yellow indicates contaminant exceeds Drinking Water (DW) Criteria.
 Blue indicates contaminant exceeds GSI Criteria.
 Green indicates contaminant exceeds both DW and GSI.
 "-" means analysis was not performed.
 "nd" means result was not detected above laboratory limit of detection.

SCALE 1" = 30'
0' 30' 60'

Groundwater Contours & Analytical Data, August 02, 2021
Part 213 Underground Storage Tank Release
NRAC/Cherry Capital Airport (TVC)

Date Issued: 09/08/2021
Date Surveyed: 11/22/2020
Designed By: j1
Drawn By: AES
Checked By: j1
Scale: 1" = 30'
Original sheet size is 22x34

Location: PART OF SECTION 13
GARFIELD TOWNSHIP
GRAND TRAVERSE COUNTY
MICHIGAN

Project Number: 2021630001.04
Sheet: 1

Gosling Czubak
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231-946-9191 phone
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www.goslingczubak.com

CIVIL ENGINEERING
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ENVIRONMENTAL SERVICES
GEOTECHNICAL
CONSTRUCTION SERVICES
DRILLING
LANDSCAPE ARCHITECTURE

Client: Northwestern Regional Airport Commission
 Location: Cherry Capitol Airport - Former UST Project
 GCES Proj #: 2015630.01

Groundwater Sampling Event - ~~July 2021~~ August 2021

	Depth to Water	Well Total Depth	Collect Samples	Comments
MW-1	8.93	13.40	YES	Sampled for PFAS
MW-4	8.60	14.40	YES	Duplicated
MW-5	10.42	15.10	YES	
MW-6	7.32	13.00	YES	
MW-8	7.87	13.60	no	
MW-18	7.81	15.70	no	
MW-43A	9.95	17.20	YES	Sampled for PFAS
MW-44A	10.28	17.40	YES	
MW-45A	10.03	16.80	YES	
MW-41A	10.33	24.70	YES	
MW-41B	10.23	34.50	YES	
MW-46A	10.66	23.60	YES	Sampled for PFAS
MW-46B	10.65	33.60	YES	Sampled for PFAS

Project Name: Cherry Capital Airport - PFAS Grant

Project #: 2020630002.05

Sampling Device(s): Peristaltic pump w/
dedicated tubing, In-Situ #2,
LaMotte turbidimeter

Well Number: MW-1

Date: 8-2-21

GCES Personnel: JG

Initial DTW (ft BTOC): 8.93

Total Depth (ft BTOC): 13.40

Time	pH (S.U.)	Temperature (°C)	Conductivity (mmho/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	DTW (ft BTOC)	Rate (mL/min.)	Notes
1124	7.65	17.45	408	2.43	281.9	1	8.98	500	
1127	7.35	17.36	410	2.78	276.7	-	8.98	500	
1130	7.16	17.41	406	2.90	281.2	-	8.98	500	
1133	6.99	17.54	401	2.92	299.7	-	8.98	500	
1136	6.94	17.50	401	2.96	308.9	-	8.98	500	
1139	6.91	17.32	400	2.98	308.1	-	8.98	500	
1142	6.87	17.45	399	2.97	308.4	1	8.98	500	

Start: 1119
Sample: 1143

SAMPLING DATA COLLECTION FORM

Well Number: MW-46B
 Date: 8-2-21
 GCES Personnel: SG
 Initial DTW: 10.68
 Total Depth: 33.60

Cherry Capital Airport
 2021630001.02

Project Name: _____
 Project Number: _____
 Sampling Device: _____
 Sample Device Vol.: _____
 Hose/Tubing Vol.: _____

Time	pH	Temp. (°C)	Cond.	D.O. (mg/L)	ORP	Turb.	DTW	Rate (mL/min.)	Notes
1235	7.55	13.08	360	0.15	-17.8	-	10.68	500	
1238	7.55	13.17	360	0.13	-57.5	-	10.68	500	
1241	7.55	13.13	360	0.15	-81.0	-	10.68	500	
1244	7.55	13.13	360	0.13	-95.7	-	10.68	500	
1247	7.56	13.13	360	0.17	-101.6	-	10.68	500	
1250	7.56	13.08	360	0.17	-105.7	+	10.68	500	

Start: 1225
 Sample: 1251

SAMPLING DATA COLLECTION FORM

Project Name:
 Project Number:
 Sampling Device:
 Sample Device Vol.:
 Hose/Tubing Vol.:

Cherry Capital Airport
 2021630001.02

Well Number: NW-46A
 Date: 8-2-21
 GCES Personnel: SG
 Initial DTW: 10.66
 Total Depth: 23.60

Time	pH	Temp. (°C)	Cond.	D.O. (mg/L)	ORP	Turb.	DTW	Rate (mL/min.)	Notes
1309	7.45	13.80	324	0.13	89.4	-	10.68	400	
1312	7.46	13.58	325	0.10	-82	-	10.68	400	
1315	7.47	13.54	326	0.12	-85.7	-	10.68	400	
1318	7.47	13.51	327	0.10	-111.8	-	10.68	400	
1321	7.47	13.55	329	0.08	-124.5	-	10.68	400	
1324	7.48	13.62	328	0.08	-130.2	-	10.68	400	
1327	7.48	13.67	329	0.09	-137.3	-	10.68	400	
1330	7.49	13.50	328	0.07	-142.1	-	10.68	400	
1333	7.49	13.49	329	0.08	-145.0	0	10.68	400	

Start: 1259
 Sample: 1334

SAMPLING DATA COLLECTION FORM

Project Name:
 Project Number:
 Sampling Device:
 Sample Device Vol.:
 Hose/Tubing Vol.:

Cherry Capital Airport
 2021630001.02

Well Number:
 Date:
 GCES Personnel:
 Initial DTW:
 Total Depth:

NW-43A
 8-2-21
 JG
 9.95
 17.20

Time	pH	Temp. (°C)	Cond.	D.O. (mg/L)	ORP	Turb.	DTW	Rate (mL/min.)	Notes
1403	7.18	13.45	362	0.13	-12.0	-	9.98	500	
1406	7.19	13.84	364	0.11	-73.5	-	9.98	500	
1409	7.17	13.94	364	0.10	-102.1	-	9.98	500	
1412	7.16	13.99	364	0.10	-109.8	-	9.98	500	
1415	7.15	13.96	363	0.09	-116.8	-	9.98	500	
1418	7.13	13.80	363	0.09	-121.5	-	9.98	500	
1421	7.10	13.74	364	0.08	-125.2	2	9.98	500	

Start: 1358
 Sample: 1420

SAMPLING DATA COLLECTION FORM

Project Name:
 Project Number:
 Sampling Device:
 Sample Device Vol.:
 Hose/Tubing Vol.:

Cherry Capital Airport
 2021630001.02

Well Number:
 Date:
 GCES Personnel:
 Initial DTW:
 Total Depth:

MW-4
 8-2-21
 JG
 8.68
 14.40

Time	pH	Temp. (°C)	Cond.	D.O. (mg/L)	ORP	Turb.	DTW	Rate (mL/min.)	Notes
1518	6.93	16.02	345	0.31	-24.7	—	8.68	500	* Duplicated
1521	6.91	15.91	347	0.35	-43.3	—	8.68	500	
1524	6.89	15.92	348	0.36	-56.7	—	8.68	500	
1527	6.87	15.95	348	0.31	-63.3	—	8.68	500	
1530	6.86	15.97	349	0.27	-70.9	—	8.68	500	
1533	6.85	15.88	351	0.23	-75.0	—	8.68	500	
1536	6.84	15.73	349	0.18	-78.9		8.68	500	

Start: 1513
 Sample: 1537

SAMPLING DATA COLLECTION FORM

Project Name:
 Project Number:
 Sampling Device:
 Sample Device Vol.:
 Hose/Tubing Vol.:

Cherry Capital Airport
 2021630001.02

Well Number: MW-5
 Date: 8-2-21
 GCES Personnel: JG
 Initial DTW: 10.42
 Total Depth: 15.10

Time	pH	Temp. (°C)	Cond.	D.O. (mg/L)	ORP	Turb.	DTW	Rate (mL/min.)	Notes
1605	7.00	16.07	364	6.60	257.8	-	10.46	500	
1608	7.05	15.98	363	6.25	258.2	-	10.46	500	
1611	7.04	15.94	361	6.20	258.4	-	10.46	500	
1614	7.03	15.89	365	6.17	259.6		10.46	500	

Start: 1559
 Sample: 1615

SAMPLING DATA COLLECTION FORM

Project Name: _____
Project Number: _____
Sampling Device: _____
Sample Device Vol.: _____
Hose/Tubing Vol.: _____

Cherry Capital Airport
 2021630001.02

Well Number: MW-45A
Date: 8-3-21
GCES Personnel: JC
Initial DTW: 10.03
Total Depth: 16.80

Time	pH	Temp. (°C)	Cond.	D.O. (mg/L)	ORP	Turb.	DTW	Rate (mL/min.)	Notes
1010	6.88	14.85	367	0.15	40.3	—	10.05	400	
1013	6.84	14.67	369	0.11	-2.6	—	10.05	400	
1016	6.82	14.64	369	0.11	-23.8	—	10.05	400	
1019	6.80	14.61	370	0.10	-33.3	1	10.05	400	
1022	6.79	14.63	371	0.09	-41.0	1	10.05	400	
1025	6.79	14.60	371	0.08	-47.1	—	10.05	400	
1028	6.78	14.60	370	0.08	-52.4	—	10.05	400	
1031	6.78	14.59	370	0.07	-54.5	—	10.05	400	
1034	6.75	14.5	371	0.08	-56.9	1	10.05	400	

Start: 1005
 Sample: 1035

SAMPLING DATA COLLECTION FORM

Project Name:
Project Number:
Sampling Device:
Sample Device Vol.:
Hose/Tubing Vol.:

Cherry Capital Airport
 2021630001.02

Well Number:
Date:
GCES Personnel:
Initial DTW:
Total Depth:

MW-6
 8-3-21
 JG
 7.32
 13.00

Time	pH	Temp. (°C)	Cond.	D.O. (mg/L)	ORP	Turb.	DTW	Rate (mL/min.)	Notes
1113	7.02	16.03	358	2.62	239.5	—	7.35	500	
1116	7.01	16.11	353	2.98	243.4	—	7.35	500	
1119	7.00	16.14	354	3.08	245.8	—	7.35	500	
1122	7.00	15.94	350	3.26	246.5	—	7.35	500	
1125	7.00	15.84	349	3.39	247.3	—	7.35	500	
1128	7.00	15.94	349	3.39	247.5	—	7.35	500	
1131	6.99	16.11	345	3.43	248.4	1	7.35	500	

Station: 1103
 Sample: 1132

SAMPLING DATA COLLECTION FORM

Project Name:
Project Number:
Sampling Device:
Sample Device Vol.:
Hose/Tubing Vol.:

Cherry Capital Airport
 2021630001.02

Well Number:
Date:
GCES Personnel:
Initial DTW:
Total Depth:

MW-414 A
 8-3-21
 JG
 10.28
 17.40

Time	pH	Temp. (°C)	Cond.	D.O. (mg/L)	ORP	Turb.	DTW	Rate (mL/min.)	Notes
925	7.72	14.45	384	0.22	5.8	—	10.30	500	
928	7.43	14.09	387	0.20	-70.0	—	10.30	500	
931	7.28	14.08	387	0.16	-92.6	—	10.30	500	
934	7.20	14.04	387	0.14	-104.5	—	10.30	500	
937	7.13	13.99	387	0.12	-111.6	1	10.30	500	
940	7.09	14.01	387	0.12	-116.7	—	10.30	500	
943	7.07	14.01	387	0.11	-119.7	—	10.30	500	
946	7.05	14.04	387	0.12	-122.5	1	10.30	500	

Start: 0920
 Sample: 0947

SAMPLING DATA COLLECTION FORM

Project Name:

Cherry Capital Airport

Well Number:

NW-4(A)

Project Number:

2021630001.02

Date:

8-3-21

Sampling Device:

GCES Personnel:

JG

Sample Device Vol.:

Initial DTW:

10.33

Hose/Tubing Vol.:

Total Depth:

24.76

Time	pH	Temp. (°C)	Cond.	D.O. (mg/L)	ORP	Turb.	DTW	Rate (mL/min.)	Notes
1215	7.25	13.81	419	0.15	39.8	-	10.35	500	
1218	7.28	13.49	421	0.10	-92.0	-	10.35	500	
1222	7.29	13.50	423	0.11	-110.7	-	10.35	500	
1225	7.31	13.44	422	0.08	-123.4	-	10.35	500	
1228	7.33	13.40	423	0.09	-136.4	-	10.35	500	
1231	7.34	13.40	423	0.07	-142.2	-	10.35	500	
1234	7.34	13.35	423	0.10	-147.6	-	10.35	500	
1237	7.35	13.49	423	0.08	-149.9	1	10.35	500	

Start: 1210
Sample: 1230

SAMPLING DATA COLLECTION FORM

Project Name:
 Project Number:
 Sampling Device:
 Sample Device Vol.:
 Hose/Tubing Vol.:

Cherry Capital Airport
 2021630001.02

Well Number:
 Date:
 GCES Personnel:
 Initial DTW:
 Total Depth:

MW-41B
 8-3-21
 JG
 10.23
 34.50

Time	pH	Temp. (°C)	Cond.	D.O. (mg/L)	ORP	Turb.	DTW	Rate (mL/min.)	Notes
1253	7.48	13.21	384	0.39	-66.6	—	10.25	500	
1256	7.48	13.26	385	0.20	-101.9	—	10.25	500	
1259	7.49	13.18	384	0.11	-123.6	—	10.25	500	
1302	7.50	13.17	384	0.10	-129.0	—	10.25	500	
1305	7.52	13.13	384	0.11	-135.9	—	10.25	500	
1308	7.53	13.11	383	0.10	-141.4	—	10.25	500	
1311	7.53	13.09	383	0.08	-144.6	1	10.25	500	

Start: 1248
 Sample: 1312

CHAIN OF CUSTODY

PROJECT NUMBER 2021630001.02	SITE NAME/ADDRESS Cherry Capital Airport (TVC Airport)	COMPANY/NAME NRAC
SAMPLED BY Joshua Gervie	COMPANY Gosling CzubaK	GTA PROJECT #

SAMPLE INFORMATION

#	SAMPLE ID	DATE SAMPLED	TIME	MATRIX	ANALYSIS		
1	MW-1	8-2-21	1143	GW	BTEX+5, Total Lead		
2	MW-4	↓	1537	↓	↓		
3	MW-5		1615				
4	MW-43A		1422				
5	MW-46A		1334				
6	MW-46B		1251				
7	Trip Blank		-			W	
8	Duplicate		↓			GW	
9	MW-6		8-3-21			1132	
10	MW-45A		↓			1035	
11	MW-44A		↓			0947	
12	MW-41A		↓			1238	
13	MW-41B		↓			1312	
14	Field Blank		↓			1205	W

BILL TO:

REPORT TO:

GCES

Adam Segarling

RELEASED BY

DATE/TIME

RECEIVED BY

DATE/TIME

[Signature] 8-3-21 / 1350

[Signature] 8/3/21 1350
rec 4:00 - office.

REQUESTED TAT STANDARD 1 BUSINESS DAY 2 BUSINESS DAYS 3 BUSINESS DAYS



INDEPENDENT TESTING LAB

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

Company: NRAC
Name:
ClientProj: 2021630001.02
GTA ProjNo: 080321-5

Site Addr: CHERRY CAPITAL AIRPORT
TVC AIRPORT
TRAVERSE CITY
Sampled By: JOSHUA GERRIE/GCES
Date Rec: 8/3/2021
Time Rec: 1:50 PM

Sample No.	Sample ID	Date Sampled	Time Sampled	Sample Matrix
1	MW-1	8/2/2021	11:43 AM	WATER
2	MW-4	8/2/2021	3:37 PM	WATER
3	MW-5	8/2/2021	4:15 PM	WATER
4	MW-43A	8/2/2021	2:22 PM	WATER
5	MW-46A	8/2/2021	1:34 PM	WATER
6	MW-46B	8/2/2021	12:51 PM	WATER
7	TRIP BLANK	8/2/2021		WATER
8	DUPLICATE	8/2/2021		WATER
9	MW-6	8/3/2021	11:32 AM	WATER
10	MW-45A	8/3/2021	10:35 AM	WATER
11	MW-44A	8/3/2021	9:47 AM	WATER
12	MW-41A	8/3/2021	12:38 PM	WATER
13	MW-41B	8/3/2021	1:12 PM	WATER
14	FIELD BLANK	8/3/2021	12:05 PM	WATER

ELECTRONIC SIGNATURE REPORT. This is a final report for the following pages of data for the samples specified above. All analysis was performed by the methods stated and all quality control measures required were completed. All quality control information is available upon request.

Kirk Chase

Kirk L. Chase/Chemist
Grand Traverse Analytical
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INDEPENDENT TESTING LAB

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COMPANY:	NRAC	GTA PROJECT NO:	080321-5
PROJECT NO:	2021630001.02	GTA SAMPLE NO:	1
LOCATION:	CHERRY CAPITAL AIRPORT	DATE SAMPLED:	8/2/2021
	TVC AIRPORT	TIME SAMPLED:	11:43 AM
	TRAVERSE CITY	DATE RECEIVED:	8/3/2021
	MI	TIME RECEIVED:	1:50 PM
SAMPLED BY:	JOSHUA GERRIE/GCES	SAMPLE ID:	MW-1
SAMPLE MATRIX:	WATER		

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.

ND = NOT DETECTED

LOD = LIMIT OF DETECTION



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COMPANY:	NRAC	GTA PROJECT NO:	080321-5
PROJECT NO:	2021630001.02	GTA SAMPLE NO:	2
LOCATION:	CHERRY CAPITAL AIRPORT	DATE SAMPLED:	8/2/2021
	TVC AIRPORT	TIME SAMPLED:	3:37 PM
	TRAVERSE CITY	DATE RECEIVED:	8/3/2021
	MI	TIME RECEIVED:	1:50 PM
SAMPLED BY:	JOSHUA GERRIE/GCES	SAMPLE ID:	MW-4
SAMPLE MATRIX:	WATER		

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	5.3	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.

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COMPANY:	NRAC	GTA PROJECT NO:	080321-5
PROJECT NO:	2021630001.02	GTA SAMPLE NO:	3
LOCATION:	CHERRY CAPITAL AIRPORT	DATE SAMPLED:	8/2/2021
	TVC AIRPORT	TIME SAMPLED:	4:15 PM
	TRAVERSE CITY	DATE RECEIVED:	8/3/2021
	MI	TIME RECEIVED:	1:50 PM
SAMPLED BY:	JOSHUA GERRIE/GCES	SAMPLE ID:	MW-5
SAMPLE MATRIX:	WATER		

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.

ND = NOT DETECTED

LOD = LIMIT OF DETECTION

COMPANY: NRAC
PROJECT NO: 2021630001.02
LOCATION: CHERRY CAPITAL AIRPORT
TVC AIRPORT
TRAVERSE CITY
MI
SAMPLED BY: JOSHUA GERRIE/GCES
SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-5
GTA SAMPLE NO: 4
DATE SAMPLED: 8/2/2021
TIME SAMPLED: 2:22 PM
DATE RECEIVED: 8/3/2021
TIME RECEIVED: 1:50 PM
SAMPLE ID: MW-43A

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	19	1.0					
Ethylbenzene	57	1.0					
Xylene(Total)	1,300	30					
1,2,4-Trimethylbenzene	460	10					
1,3,5-Trimethylbenzene	160	10					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	61	5.0					
2-Methylnaphthalene	22	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.
ND = NOT DETECTED
LOD = LIMIT OF DETECTION

COMPANY: NRAC
PROJECT NO: 2021630001.02
LOCATION: CHERRY CAPITAL AIRPORT
TVC AIRPORT
TRAVERSE CITY
MI
SAMPLED BY: JOSHUA GERRIE/GCES
SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-5
GTA SAMPLE NO: 5
DATE SAMPLED: 8/2/2021
TIME SAMPLED: 1:34 PM
DATE RECEIVED: 8/3/2021
TIME RECEIVED: 1:50 PM
SAMPLE ID: MW-46A

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.

ND = NOT DETECTED

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COMPANY:	NRAC	GTA PROJECT NO:	080321-5
PROJECT NO:	2021630001.02	GTA SAMPLE NO:	6
LOCATION:	CHERRY CAPITAL AIRPORT	DATE SAMPLED:	8/2/2021
	TVC AIRPORT	TIME SAMPLED:	12:51 PM
	TRAVERSE CITY	DATE RECEIVED:	8/3/2021
	MI	TIME RECEIVED:	1:50 PM
SAMPLED BY:	JOSHUA GERRIE/GCES	SAMPLE ID:	MW-46B
SAMPLE MATRIX:	WATER		

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.

ND = NOT DETECTED

LOD = LIMIT OF DETECTION



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COMPANY: NRAC
 PROJECT NO: 2021630001.02
 LOCATION: CHERRY CAPITAL AIRPORT
 TVC AIRPORT
 TRAVERSE CITY
 MI
 SAMPLED BY: JOSHUA GERRIE/GCES
 SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-5
 GTA SAMPLE NO: 7
 DATE SAMPLED: 8/2/2021
 TIME SAMPLED:
 DATE RECEIVED: 8/3/2021
 TIME RECEIVED: 1:50 PM
 SAMPLE ID: TRIP BLANK

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.
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COMPANY: NRAC
 PROJECT NO: 2021630001.02
 LOCATION: CHERRY CAPITAL AIRPORT
 TVC AIRPORT
 TRAVERSE CITY
 MI
 SAMPLED BY: JOSHUA GERRIE/GCES
 SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-5
 GTA SAMPLE NO: 8
 DATE SAMPLED: 8/2/2021
 TIME SAMPLED:
 DATE RECEIVED: 8/3/2021
 TIME RECEIVED: 1:50 PM
 SAMPLE ID: DUPLICATE

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	5.4	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.

ND = NOT DETECTED

LOD = LIMIT OF DETECTION

COMPANY: NRAC
PROJECT NO: 2021630001.02
LOCATION: CHERRY CAPITAL AIRPORT
TVC AIRPORT
TRAVERSE CITY
MI
SAMPLED BY: JOSHUA GERRIE/GCES
SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-5
GTA SAMPLE NO: 9
DATE SAMPLED: 8/3/2021
TIME SAMPLED: 11:32 AM
DATE RECEIVED: 8/3/2021
TIME RECEIVED: 1:50 PM
SAMPLE ID: MW-6

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.

ND = NOT DETECTED

LOD = LIMIT OF DETECTION

COMPANY: NRAC
PROJECT NO: 2021630001.02
LOCATION: CHERRY CAPITAL AIRPORT
TVC AIRPORT
TRAVERSE CITY
MI
SAMPLED BY: JOSHUA GERRIE/GCES
SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-5
GTA SAMPLE NO: 10
DATE SAMPLED: 8/3/2021
TIME SAMPLED: 10:35 AM
DATE RECEIVED: 8/3/2021
TIME RECEIVED: 1:50 PM
SAMPLE ID: MW-45A

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	34	1.0					
1,3,5-Trimethylbenzene	430	10					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	90	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.

ND = NOT DETECTED

LOD = LIMIT OF DETECTION

COMPANY: NRAC
PROJECT NO: 2021630001.02
LOCATION: CHERRY CAPITAL AIRPORT
TVC AIRPORT
TRAVERSE CITY
MI
SAMPLED BY: JOSHUA GERRIE/GCES
SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-5
GTA SAMPLE NO: 11
DATE SAMPLED: 8/3/2021
TIME SAMPLED: 9:47 AM
DATE RECEIVED: 8/3/2021
TIME RECEIVED: 1:50 PM
SAMPLE ID: MW-44A

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	1.7	1.0					
Xylene(Total)	170	3.0					
1,2,4-Trimethylbenzene	590	10					
1,3,5-Trimethylbenzene	390	10					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	23	5.0					
2-Methylnaphthalene	55	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.

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COMPANY:	NRAC	GTA PROJECT NO:	080321-5
PROJECT NO:	2021630001.02	GTA SAMPLE NO:	12
LOCATION:	CHERRY CAPITAL AIRPORT	DATE SAMPLED:	8/3/2021
	TVC AIRPORT	TIME SAMPLED:	12:38 PM
	TRAVERSE CITY	DATE RECEIVED:	8/3/2021
	MI	TIME RECEIVED:	1:50 PM
SAMPLED BY:	JOSHUA GERRIE/GCES	SAMPLE ID:	MW-41A
SAMPLE MATRIX:	WATER		

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.

ND = NOT DETECTED

LOD = LIMIT OF DETECTION



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COMPANY:	NRAC	GTA PROJECT NO:	080321-5
PROJECT NO:	2021630001.02	GTA SAMPLE NO:	13
LOCATION:	CHERRY CAPITAL AIRPORT	DATE SAMPLED:	8/3/2021
	TVC AIRPORT	TIME SAMPLED:	1:12 PM
	TRAVERSE CITY	DATE RECEIVED:	8/3/2021
	MI	TIME RECEIVED:	1:50 PM
SAMPLED BY:	JOSHUA GERRIE/GCES	SAMPLE ID:	MW-41B
SAMPLE MATRIX:	WATER		

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.

ND = NOT DETECTED

LOD = LIMIT OF DETECTION

COMPANY: NRAC
PROJECT NO: 2021630001.02
LOCATION: CHERRY CAPITAL AIRPORT
TVC AIRPORT
TRAVERSE CITY
MI
SAMPLED BY: JOSHUA GERRIE/GCES
SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-5
GTA SAMPLE NO: 14
DATE SAMPLED: 8/3/2021
TIME SAMPLED: 12:05 PM
DATE RECEIVED: 8/3/2021
TIME RECEIVED: 1:50 PM
SAMPLE ID: FIELD BLANK

EPA 8260B VOLATILE ORGANICS

<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Extracted</u>	<u>Date Complete</u>	<u>Prep Method</u>
Benzene	ND	1.0	ug/L (PPB)	MR		8/5/2021	EPA 5030B
Toluene	ND	1.0					
Ethylbenzene	ND	1.0					
Xylene(Total)	ND	3.0					
1,2,4-Trimethylbenzene	ND	1.0					
1,3,5-Trimethylbenzene	ND	1.0					
Methyl-t-Butyl Ether	ND	5.0					
Naphthalene	ND	5.0					
2-Methylnaphthalene	ND	5.0					
1,2-Dibromoethane	ND	1.0					
1,2-Dichloroethane	ND	1.0					

SOIL/SOLIDS CONCENTRATIONS ARE DETERMINED ON A DRY WEIGHT BASIS.

ND = NOT DETECTED

LOD = LIMIT OF DETECTION



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COMPANY: NRAC
PROJECT NO: 2021630001.02
LOCATION: CHERRY CAPITAL AIRPORT
TVC AIRPORT
TRAVERSE CITY
MI
SAMPLED BY: JOSHUA GERRIE/GCES
GTA PROJECT NO: 080321-1
GTA SAMPLE NO: 1
DATE SAMPLED: 8/2/2021
TIME SAMPLED: 11:43 AM
DATE RECEIVED: 8/3/2021
TIME RECEIVED: 1:50 PM
SAMPLE MATRIX: WATER

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
1	LEAD TOTAL EPA 6020A	ND	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
LOD = LIMIT OF DETECTION
DISS = DISSOLVED



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COMPANY: NRAC
 PROJECT NO: 2021630001.02
 LOCATION: CHERRY CAPITAL AIRPORT
 TVC AIRPORT
 TRAVERSE CITY
 MI
 SAMPLED BY: JOSHUA GERRIE/GCES
 SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-
 GTA SAMPLE NO: 2

DATE SAMPLED: 8/2/2021
 TIME SAMPLED: 3:37 PM
 DATE RECEIVED: 8/3/2021
 TIME RECEIVED: 1:50 PM

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
SAMPLE ID: MW-4							
2	LEAD TOTAL EPA 6020A	ND	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED



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COMPANY: NRAC
 PROJECT NO: 2021630001.02
 LOCATION: CHERRY CAPITAL AIRPORT
 TVC AIRPORT
 TRAVERSE CITY
 MI
 SAMPLED BY: JOSHUA GERRIE/GCES
 SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-3
 GTA SAMPLE NO: 3
 DATE SAMPLED: 8/2/2021
 TIME SAMPLED: 4:15 PM
 DATE RECEIVED: 8/3/2021
 TIME RECEIVED: 1:50 PM

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
SAMPLE ID: MW-5							
3	LEAD TOTAL EPA 6020A	ND	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED



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COMPANY: NRAC
PROJECT NO: 2021630001.02
LOCATION: CHERRY CAPITAL AIRPORT
TVC AIRPORT
TRAVERSE CITY
MI
SAMPLED BY: JOSHUA GERRIE/GCES
GTA PROJECT NO: 080321-4
GTA SAMPLE NO: 4
DATE SAMPLED: 8/2/2021
TIME SAMPLED: 2:22 PM
DATE RECEIVED: 8/3/2021
TIME RECEIVED: 1:50 PM
SAMPLE MATRIX: WATER

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
4	LEAD TOTAL EPA 6020A	ND	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
LOD = LIMIT OF DETECTION
DISS = DISSOLVED



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COMPANY: NRAC
 PROJECT NO: 2021630001.02
 LOCATION: CHERRY CAPITAL AIRPORT
 TVC AIRPORT
 TRAVERSE CITY
 MI
 SAMPLED BY: JOSHUA GERRIE/GCES
 SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-
 GTA SAMPLE NO: 5

DATE SAMPLED: 8/2/2021
 TIME SAMPLED: 1:34 PM
 DATE RECEIVED: 8/3/2021
 TIME RECEIVED: 1:50 PM

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
SAMPLE ID: MW-46A							
5	LEAD TOTAL EPA 6020A	0.0035	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED

COMPANY: NRAC
 PROJECT NO: 2021630001.02
 LOCATION: CHERRY CAPITAL AIRPORT
 TVC AIRPORT
 TRAVERSE CITY
 MI
 SAMPLED BY: JOSHUA GERRIE/GCES
 SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-
 GTA SAMPLE NO: 6

DATE SAMPLED: 8/2/2021
 TIME SAMPLED: 12:51 PM
 DATE RECEIVED: 8/3/2021
 TIME RECEIVED: 1:50 PM

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
6	LEAD TOTAL EPA 6020A	ND	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED

COMPANY: NRAC
 PROJECT NO: 2021630001.02
 LOCATION: CHERRY CAPITAL AIRPORT
 TVC AIRPORT
 TRAVERSE CITY
 MI
 SAMPLED BY: JOSHUA GERRIE/GCES
 SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-
 GTA SAMPLE NO: 7

DATE SAMPLED: 8/2/2021
 TIME SAMPLED:
 DATE RECEIVED: 8/3/2021
 TIME RECEIVED: 1:50 PM

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
7	SAMPLE ID: TRIP BLANK	ND	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED



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COMPANY: NRAC
 PROJECT NO: 2021630001.02
 LOCATION: CHERRY CAPITAL AIRPORT
 TVC AIRPORT
 TRAVERSE CITY
 MI
 SAMPLED BY: JOSHUA GERRIE/GCES
 SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-
 GTA SAMPLE NO: 8

DATE SAMPLED: 8/2/2021
 TIME SAMPLED:
 DATE RECEIVED: 8/3/2021
 TIME RECEIVED: 1:50 PM

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
SAMPLE ID: DUPLICATE							
8	LEAD TOTAL EPA 6020A	ND	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED



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COMPANY: NRAC
 PROJECT NO: 2021630001.02
 LOCATION: CHERRY CAPITAL AIRPORT
 TVC AIRPORT
 TRAVERSE CITY
 MI
 SAMPLED BY: JOSHUA GERRIE/GCES
 SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-
 GTA SAMPLE NO: 9

DATE SAMPLED: 8/3/2021
 TIME SAMPLED: 11:32 AM
 DATE RECEIVED: 8/3/2021
 TIME RECEIVED: 1:50 PM

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
SAMPLE ID: MW-6							
9	LEAD TOTAL EPA 6020A	ND	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED

COMPANY: NRAC
 PROJECT NO: 2021630001.02
 LOCATION: CHERRY CAPITAL AIRPORT
 TVC AIRPORT
 TRAVERSE CITY
 MI
 SAMPLED BY: JOSHUA GERRIE/GCES
 SAMPLE MATRIX: WATER
 GTA PROJECT NO: 080321-
 GTA SAMPLE NO: 10
 DATE SAMPLED: 8/3/2021
 TIME SAMPLED: 10:35 AM
 DATE RECEIVED: 8/3/2021
 TIME RECEIVED: 1:50 PM

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
SAMPLE ID: MW-45A							
10	LEAD TOTAL EPA 6020A	ND	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED



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COMPANY:	NRAC	GTA PROJECT NO:	080321-11
PROJECT NO:	2021630001.02	GTA SAMPLE NO:	11
LOCATION:	CHERRY CAPITAL AIRPORT TVC AIRPORT TRAVERSE CITY MI	DATE SAMPLED:	8/3/2021
SAMPLED BY:	JOSHUA GERRIE/GCES	TIME SAMPLED:	9:47 AM
		DATE RECEIVED:	8/3/2021
		TIME RECEIVED:	1:50 PM
SAMPLE MATRIX:	WATER		

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
SAMPLE ID:	MW-44A						
11	LEAD TOTAL EPA 6020A	ND	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED

COMPANY: NRAC
 PROJECT NO: 2021630001.02
 LOCATION: CHERRY CAPITAL AIRPORT
 TVC AIRPORT
 TRAVERSE CITY
 MI
 SAMPLED BY: JOSHUA GERRIE/GCES
 SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-12
 GTA SAMPLE NO: 12
 DATE SAMPLED: 8/3/2021
 TIME SAMPLED: 12:38 PM
 DATE RECEIVED: 8/3/2021
 TIME RECEIVED: 1:50 PM

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
SAMPLE ID: MW-41A							
12	LEAD TOTAL EPA 6020A	ND	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED



INDEPENDENT TESTING LAB

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

COMPANY: NRAC
 PROJECT NO: 2021630001.02
 LOCATION: CHERRY CAPITAL AIRPORT
 TVC AIRPORT
 TRAVERSE CITY
 MI
 SAMPLED BY: JOSHUA GERRIE/GCES
 SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-13
 GTA SAMPLE NO: 13
 DATE SAMPLED: 8/3/2021
 TIME SAMPLED: 1:12 PM
 DATE RECEIVED: 8/3/2021
 TIME RECEIVED: 1:50 PM

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
SAMPLE ID: MW-41B							
13	LEAD TOTAL EPA 6020A	ND	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED



INDEPENDENT TESTING LAB

830 ROBINWOOD COURT, TRAVERSE CITY, MI 49686

PH: 231-929-0905

FAX: 231-929-0894

www.gtanalytical.com

COMPANY: NRAC
 PROJECT NO: 2021630001.02
 LOCATION: CHERRY CAPITAL AIRPORT
 TVC AIRPORT
 TRAVERSE CITY
 MI
 SAMPLED BY: JOSHUA GERRIE/GCES
 SAMPLE MATRIX: WATER

GTA PROJECT NO: 080321-14
 GTA SAMPLE NO: 14
 DATE SAMPLED: 8/3/2021
 TIME SAMPLED: 12:05 PM
 DATE RECEIVED: 8/3/2021
 TIME RECEIVED: 1:50 PM

METALS

<u>No:</u>	<u>Analysis</u>	<u>Concentration</u>	<u>LOD</u>	<u>Units</u>	<u>Analyst</u>	<u>Date Completed</u>	<u>Digestion Method</u>
SAMPLE ID:	FIELD BLANK						
14	LEAD TOTAL EPA 6020A	ND	0.0010	mg/L (PPM)	MR	8/11/2021	EPA 3005A

ND = NOT DETECTED, RESULT < LOD.
 LOD = LIMIT OF DETECTION
 DISS = DISSOLVED

CHAIN OF CUSTODY

PROJECT NUMBER 2021630001.02	SITE NAME/ADDRESS Cherry Capital Airport (TVC Airport)	COMPANY/NAME NRAC
SAMPLED BY Joshua Gemie	COMPANY Gosling Czubak	GTA PROJECT # 080321-5

SAMPLE INFORMATION

#	SAMPLE ID	DATE SAMPLED	TIME	MATRIX	ANALYSIS			
1	MW-1	8-2-21	1143	GW	BTEX+5, Total Lead			
2	MW-4	↓	1537	↓	↓			
3	MW-5		1615					
4	MW-43A		1422					
5	MW-46A		1334					
6	MW-46B		1251			↓		
7	Trip Blank		-			W		
8	Duplicate		↓			GW		
9	MW-6		8-3-21			1132	↓	
10	MW-45A		1035			↓		
11	MW-44A		0947					
12	MW-41A		1238					
13	MW-41B		1312					↓
14	Field Blank		1205					W

BILL TO:

GCES

REPORT TO:

Adam Segerling

RELEASED BY

DATE/TIME

RECEIVED BY

DATE/TIME

[Signature] 8-3-21 / 1350

[Signature] 8/3/21 1350
Tel 9.00 c on 10

REQUESTED TAT STANDARD 1 BUSINESS DAY 2 BUSINESS DAYS 3 BUSINESS DAYS

Attachment 4
Property Information



Gosling Czubak
engineering sciences, inc.

(TRAVERSE CITY SW)

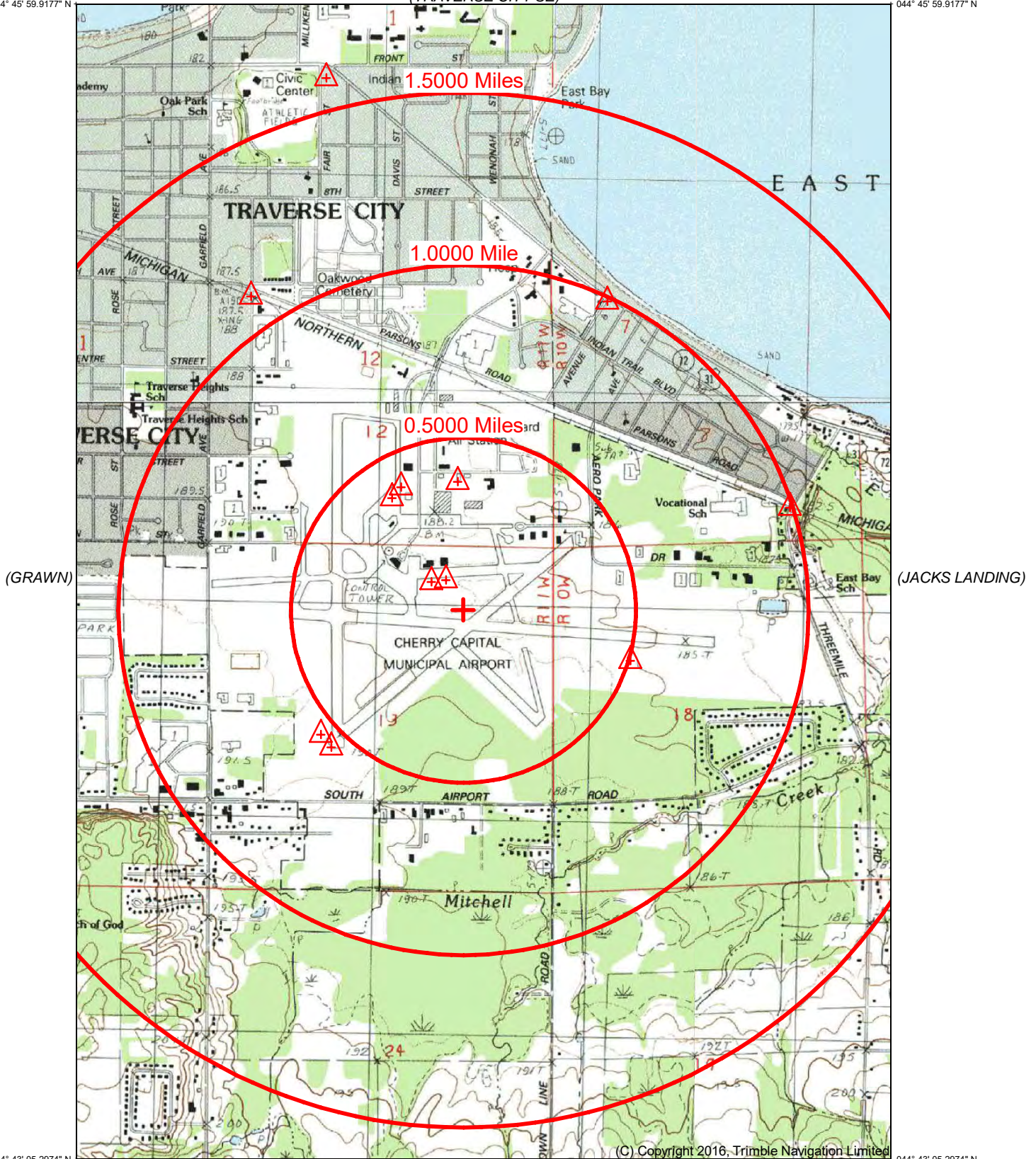


MAYFIELD QUADRANGLE
MICHIGAN
TOPOGRAPHIC SERIES 'WILLIAMSBURG)

085° 36' 10.8392" W
044° 45' 59.9177" N

(TRAVERSE CITY SE)

085° 33' 17.3678" W
044° 45' 59.9177" N



044° 43' 05.2974" N
085° 36' 10.8392" W

(C) Copyright 2016, Trimble Navigation Limited

Printed: Tue Aug 10, 2021

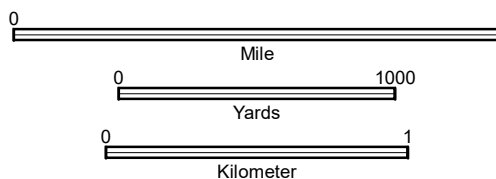
044° 43' 05.2974" N
085° 33' 17.3678" W

(BUCKLEY)

Declination



(KINGSLEY)
SCALE 1:25000



CONTOUR INTERVAL 10 FT

Produced by Trimble Terrain Navigator Pro
Topography based on USGS 1:25,000
Maps

North American 1983 Datum (NAD83)

To place on the predicted North American
1927 move the projection lines 0M N and
6M W

(WALTON)

44085-F5-TM-025
MAYFIELD, MI
JAN 1, 1983

Parcel 51-113-002-02

Grand Traverse County Property Information 2021 - June 1st PRE Update

Parcel: 51-113-002-02

Jurisdiction: City of Traverse City

Owner Name: GRAND TRAVERSE CO & LEELANAU CO

Property Address: 727 FLY DON'T DR
TRAVERSE CITY, MI 49686

Mailing Address: 727 FLY DON'T DR
TRAVERSE CITY, MI 49686

2021 - June 1st PRE Update Property Information

Current Taxable Value: \$0

Last Year's Taxable Value: \$0

School District: 28010

Current Assessment: \$0

Last Year's Assessment: \$0

Current S.E.V.: \$0

Last Year's S.E.V.: \$0

Current P.R.E.*: 0%

* This percentage may pertain to exemptions other than the Principal Residence Exemption.

Current Property Class: 703 - Exempt County, City, Twp. or Village

Tax Information

Taxable Year	Summer Tax Amount	Winter Tax Amount
2020	\$0.00	\$0.00
2019	\$0.00	\$0.00
2018	\$0.00	\$0.00

Property Sale Information

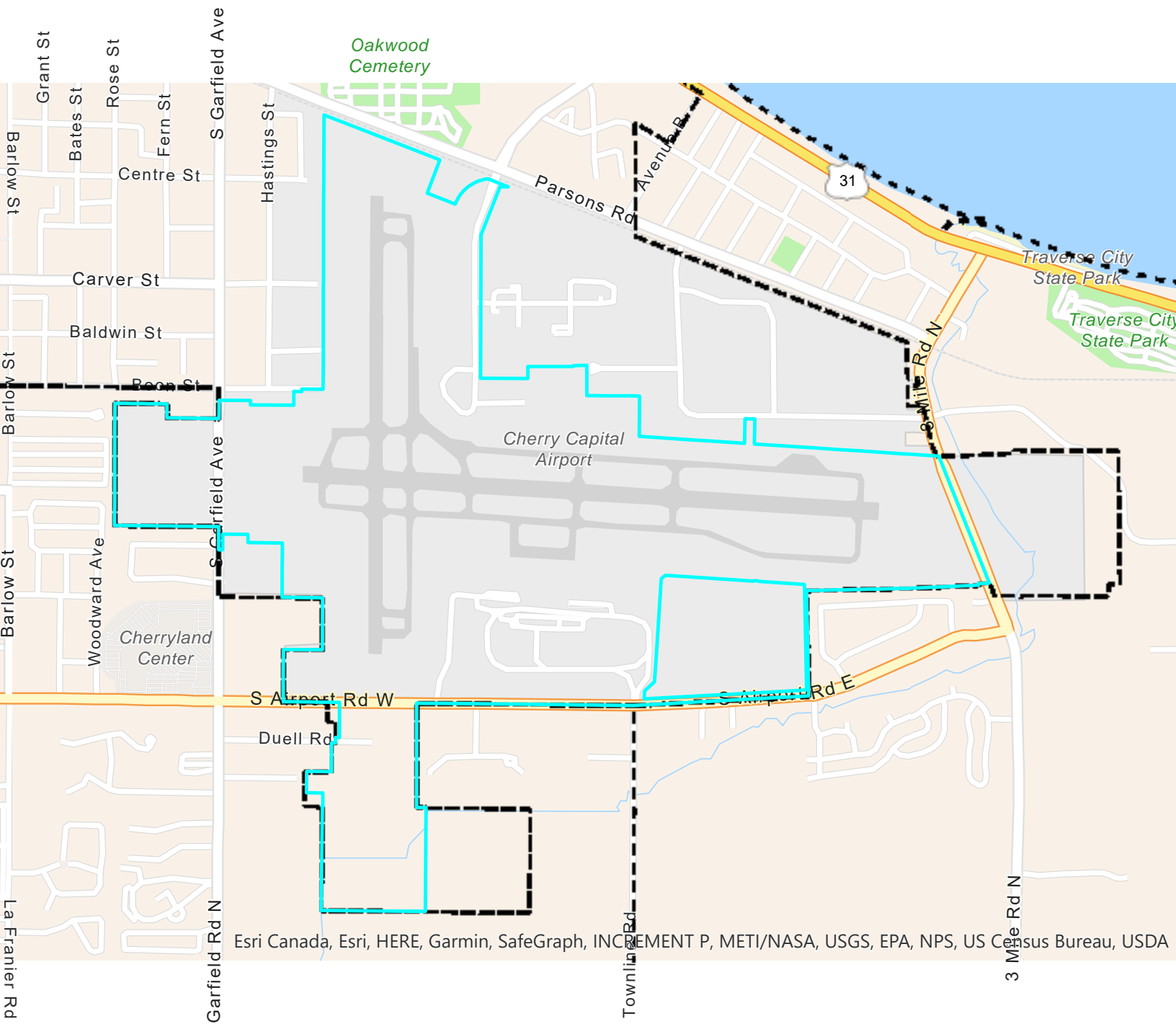
Sale information is not available for this property

Tax Description

REMAINDER DESCRIPTION : PO SECTIONS 12,13,14, AND 24, T27N, R11W, AND PO SECTIONS 17 AND 18, T27N, R1 0W, CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN. DESCRIBED AS FOLLOWS: BEGINNING AT A POINT WHICH IS S 89°48'15" E, 677.73 FEET AND N

0°10'58" E, 154.42 FEET FROM THE 1/4 CORNER COMMON TO SECTIONS 12 AND 13, T27N, R11W; THENCE S 89°48'15" E, 599.19 FEET; THENCE N 0°10'11" E, 149.93 FEET; THENCE S 89°49'15" E, 577.99 FEET; THENCE N 0°20'35" W 13.60 FEET TO A POINT ON BOUNDARY OF PLAT OF TRAVERSE CITY AIRPORT INDUSTRIAL PARK; THENCE ALONG SAID PLAT BOUNDARY FOR NEXT NINE COURSES, N 89°03'30" E, 173.29 FEET; THENCE S 0°13'39" W, 383.78 FEET; THENCE S 89°44'41" E, 669.76 FEET; THENCE S 0°15'25" W 512.06 FEET; THENCE S 86°18'05" E, 1342.36 FEET; THENCE N 0°48'25" E, 311.46 FEET; THENCE S 86°18'05" E, 124.87 FEET; THENCE S 0°52'34" W, 317.90 FEET; THENCE S 86°17'35" E, 2346.85 FEET TO THE CENTERLINE OF THREE MILE ROAD; THENCE S 21°49'33" E, 1735.93 FEET FOLLOWING THE CENTERLINE OF THREE MILE ROAD; THENCE S 87°22'11" W, 138.16 FEET; THENCE SOUTH, 20.02 FEET TO NORTH LINE OF PLAT OF SWIGARTS SUNSET TERRACE AND EAST & WEST 1/4 LINE OF SECTION 18; THENCE S 87°22'11" W, 858.80 FEET ALONG SAID 1/4 LINE; THENCE CONTINUING ALONG THE EAST & WEST 1/4 LINE S 88°45'39" W, 1328.29 FEET TO CENTER 1/4 CORNER OF SECTION 18 AND NW CORNER OF WIGARTS SUNSET TERRACE; THENCE S 1°10'32" E, 1334.55 FEET ALONG THE NORTH & SOUTH 1/4 LINE AND THE WEST BOUNDARY OF SWIGARTS SUNSET TERRACE TO THE SOUTH 1/8 LINE OF SECTION 18 AND THE CENTERLINE OF SOUTH AIRPORT ROAD; THENCE S 86°51'43" W, 2226.95 FEET ALONG SAID CENTERLINE TO EAST LINE OF SECTION 13, T27N, R11W; THENCE CONTINUING ALONG SAID CENTERLINE AND S 1/8 LINE OF SECTION 13 N 89°16'05" W, 2637.79 FEET TO NORTH & SOUTH 1/4 LINE OF SECTION 13; THENCE CONTINUING ALONG SAID CENTERLINE AND S 1/8 LINE N 89°31'10" W, 120.00 FEET; THENCE S 0°04'37" W, 1326.40 FEET TO SOUTH LINE OF SECTION 13; THENCE S 89°24'06" E, 120.00 FEET ALONG SAID SOUTH SECTION LINE TO 1/4 CORNER COMMON TO SECTIONS 13 AND 24, T27N, R11W; THENCE S 0°19'08" W, 1316.69 FEET ALONG NORTH & SOUTH 1/4 LINE OF SECTION 24; THENCE N 89°30'30" W, 1323.78 FEET ALONG NORTH 1/8 LINE OF SECTION 24; THENCE N 0°26'36" E, 1319.14 FEET ALONG WEST 1/8 LINE OF SECTION 24 TO SOUTH LINE OF SECTION 13; THENCE S 89°24'06" E, 8.96 FEET ALONG SOUTH LINE OF SECTION 13; THENCE N 0°07'37" W, 170.01 FEET; THENCE N 89°24'06" W, 208.01 FEET; THENCE N 0°07'37" E 271.24 FEET; THENCE S 89°24'06" E, 314.18 FEET; THENCE N 0°07'37" E, 354.90 FEET TO SOUTH RIGHT-OF-WAY LINE OF DUELL ROAD; THENCE S 89°31'10" E, 51.97 FEET ALONG SAID RIGHT-OF-WAY; THENCE N 0°07'37" E, 80.51 FEET; THENCE S 89°31'10" E, 50.00 FEET; THENCE N 0°07'37" E, 447.50 FEET TO CENTERLINE OF SOUTH AIRPORT ROAD AND SOUTH 1/8 LINE OF SECTION 13; THENCE N 89°31'10" W, 712.00 FEET ALONG SAID CENTERLINE; THENCE N 0°04'58" E, 659.17 FEET; THENCE S 89°29'09" E, 494.86 FEET; THENCE N 0°04'11" E, 659.26 FEET; THENCE N 89°22'07" W, 512.98 FEET; THENCE N 0°07'59" E, 600.75 FEET; THENCE S 89°55'27" W, 807.19 FEET TO WEST LINE OF SECTION 13 AND THE CENTERLINE OF GARFIELD AVENUE; THENCE N 0°07'35" E, 296.58 FEET ALONG CENTERLINE OF GARFIELD AVENUE TO NORTH LINE OF LOT 7, PLAT OF WILBUR WOODS, EXTENDED EAST; THENCE N 89°20'39" W, 1323.14 FEET ALONG NORTH LINE OF SAID LOT 7 AND NORTH LINE OF PLAT OF FORESTLANE SUBDIVISION; THENCE N 0°09'57" E, 1546.62 FEET ALONG WEST LINE OF GLADEWOOD SUBDIVISION, TOWN AND COUNTRY MOBILE HOME VILLAGE, AND PLAT OF ROBINWOOD COURT; THENCE S 89°18'17" E, 661.41 FEET ALONG SOUTH LINE OF ARBUTUS SUBDIVISION NO.2; THENCE S 0°08'46" W, 177.00 FEET; THENCE S 89°18'26" E, 660.74 FEET TO WEST LINE OF SECTION 13 AND CENTERLINE OF GARFIELD AVENUE; THENCE N 0°07'35" E, 232.05 FEET ALONG SAID CENTERLINE; THENCE S 89°25'22" E, 750.02 FEET; THENCE N 0°07'35" E, 20.00 FEET; THENCE S 89°25'22" E, 200.00 FEET; THENCE N 0°07'35" E, 100.00 FEET; THENCE S 89°25'22" E, 100.00 FEET; THENCE N 00°07'35" E, 33.00 FEET TO THE NORTH LINE OF SECTION 13 AND CENTERLINE OF BOON STREET; THENCE S 89°25'15" E, 372.09 FEET TO SE CORNER OF THE PLAT OF OAKWOOD ADDITION AND W 1/8 LINE OF SECTION 12; THENCE N 0°12'08" E, 3472.18 FEET ALONG EAST LINE OF PLAT OF OAKWOOD ADDITION AND SAID W 1/8 LINE TO SOUTHERLY RIGHT-OF-WAY LINE OF C & O RAILROAD; THENCE S 68°45'22" E, 1580.54 FEET ALONG SAID RAILROAD RIGHT-OF-WAY; THENCE S 21°14'04" W, 449.95 FEET; THENCE S 68°43'27" E, 382.84 FEET; THENCE ALONG A NON-TANGENT 497.90 FOOT RADIUS CURVE TO RIGHT (CENTRAL ANGLE = 63°49'12", CHORD DIST.= 526.37 FEET, CHORD BEARING = N 52°26'45" E) FOR 554.60 FEET RETURNING TO SAID RAILROAD RIGHT-OF-WAY; THENCE S 68°48'15" E, 275.14 FEET ALONG SAID RAILROAD RIGHT-OF-WAY; THENCE N 89°54'22" W, 103.63 FEET; THENCE S 21°46'28" W, 655.54 FEET; THENCE S

0°10'29" W, 1814.43 FEET TO THE POINT OF BEGINNING. EXCECPT: PART OF SECTION 18, T27N, R10W, CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT WEST 1/4 CORNER OF SAID SECTION; THENCE N87°18'11"E 333.91 FEET ALONG EAST AND WEST 1/4 LINE OF SAID SECTION; THENCE S04°32'49"W 571.95 FEET TO THE POINT OF BEGINNING OF DESCRIPTION; THENCE N87°42'43"E 1191.12 FEET; THENCE S02°17'17"E 677.26 FEET TO PROPOSED NORTHERLY RIGHT OF WAY OF SOUTH AIRPORT ROAD; THENCE S87°42'43"W 1389.84 FEET ALONG A LINE THAT IS 75 FEET NORTH OF AND PARALLEL WITH SOUTH LINE OF NORTH 1/2 OF SUUTHWEST 1/4 OF SAID SECTION; THENCE N04°32'49"E 101.26 FEET; THENCE N48°02'00"E 69.59 FEET; THENCE N04°32'49"E 471.79 FEET TO POB. EXECPT: PART OF THE N 1/2 OF THE SW 1/4 OF SEC 18, T27N, R10W, CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN, MORE FULLY DESCRIBED AS: COM W 1/4 COR OF SAID SEC 18; TH N 87°18'11" E, 333.91 FT ALONG THE E-W 1/4 LINE OF SAID SEC 18; TH S 04°32'49" W, 571.95 FT TO POB; TH N 87° 42' 43" E, 1191.12 FT; TH S 2° 17' 17" E, 677.26 FT; TH N 87° 42' 53" E, 574.81 FT; TH N 86° 6' 29" E, 102.62 FT; TH N 0° 18' 36" W, 1334.58 FT; TH N 85° 26' 27" W, 1772.02 FT; TH S 51° 40' 33" W, 69.03 FT; TH S 4° 32' 35" W, 835.95 FT TO POB; CONTAINING 1,005.92 ACRES - 2018 2019 SPLIT OFF DEVELOPMENT AREA - NORTH & EAST OF COSTCO SUBJECT TO THE RIGHT-OF-WAYS OF THREE MILE ROAD, SOUTH AIRPORT ROAD, SOUTH GARFIELD AVENUE, BOON STREET, AND DUELL ROAD. SPLIT ON 12/27/2016 INTO 28-51-113-002-02, 28-51-898-960-00;



Esri Canada, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Parcel 51-113-002-03

Grand Traverse County Property Information 2021 - June 1st PRE Update

Parcel: 51-113-002-03

Jurisdiction: City of Traverse City

Owner Name: GRAND TRAVERSE CO & LEELANAU CO

Property Address: 125 E SOUTH AIRPORT RD
TRAVERSE CITY, MI 49686

Mailing Address: 727 FLY DON'T DR
TRAVERSE CITY, MI 49686

2021 - June 1st PRE Update Property Information

Current Taxable Value: \$875,100
Last Year's Taxable Value: \$873,800
School District: 28010
Current Assessment: \$875,100
Last Year's Assessment: \$873,800
Current S.E.V.: \$875,100
Last Year's S.E.V.: \$873,800
Current P.R.E.*: 0%

* This percentage may pertain to exemptions other than the Principal Residence Exemption.

Current Property Class: 202 - Commercial - Vacant

Tax Information

Taxable Year	Summer Tax Amount	Winter Tax Amount
2020	\$44,654.25	\$3,745.35
2019	\$44,911.87	\$3,945.71
2018	\$43,896.89	\$3,910.56

Delinquent Tax Information

For current delinquent tax information or to pay your delinquent taxes online, [CLICK HERE](#) and you will be redirected to a third party site.

Property Sale Information

Sale information is not available for this property

Tax Description

PART NORTH HALF OF SOUTHWEST QUARTER OF SECTION 18, TOWN 27 NORTH, RANGE 10 WEST, CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN, MORE FULLY DESCRIBED AS: COMMENCING AT THE WEST QUARTER CORNER OF SAID SECTION 18; THENCE NORTH 87°18'11" EAST, 333.91 FEET ALONG THE EAST-WEST QUARTER LINE OF SAID SECTION 18; THENCE SOUTH 04°32'49" WEST, 571 .95 FEET; TO THE POINT OF BEGINNING; THENCE NORTH 87°42'43" EAST, 1,191 .12 FEET; THENCE SOUTH 02°17'17" EAST, 677.26 FEET; THENCE SOUTH 87°42'43" WEST, 1,389.84 FEET; THENCE NORTH 04°32'49" EAST, 101 .26 FEET; THENCE NORTH 48°02'00" EAST, 169.59 FEET; THENCE NORTH 04°32'49" EAST, 471 .79 FEET; TO THE POINT OF BEGINNING. SAID PARCEL CONTAINS 19.57 ACRES MORE OR LESS. SPLIT/COMBINED ON 12/27/2016 FROM 28-51-113-002-01;



Parcel 51-113-002-04

Grand Traverse County Property Information 2021 - June 1st PRE Update

Parcel: 51-113-002-04

Jurisdiction: City of Traverse City

Owner Name: GRAND TRAVERSE CO & LEELANAU CO

Property Address: E SOUTH AIRPORT RD
TRAVERSE CITY, MI 49686

Mailing Address: 727 FLY DON'T DR
TRAVERSE CITY, MI 49686

2021 - June 1st PRE Update Property Information

Current Taxable Value: \$0
Last Year's Taxable Value: \$0
School District: 28010
Current Assessment: \$0
Last Year's Assessment: \$0
Current S.E.V.: \$0
Last Year's S.E.V.: \$0
Current P.R.E.*: 0%

* This percentage may pertain to exemptions other than the Principal Residence Exemption.

Current Property Class: 202 - Commercial - Vacant

Tax Information

Taxable Year	Summer Tax Amount	Winter Tax Amount
2020	\$0.00	\$0.00
2019	\$0.00	\$0.00

Delinquent Tax Information

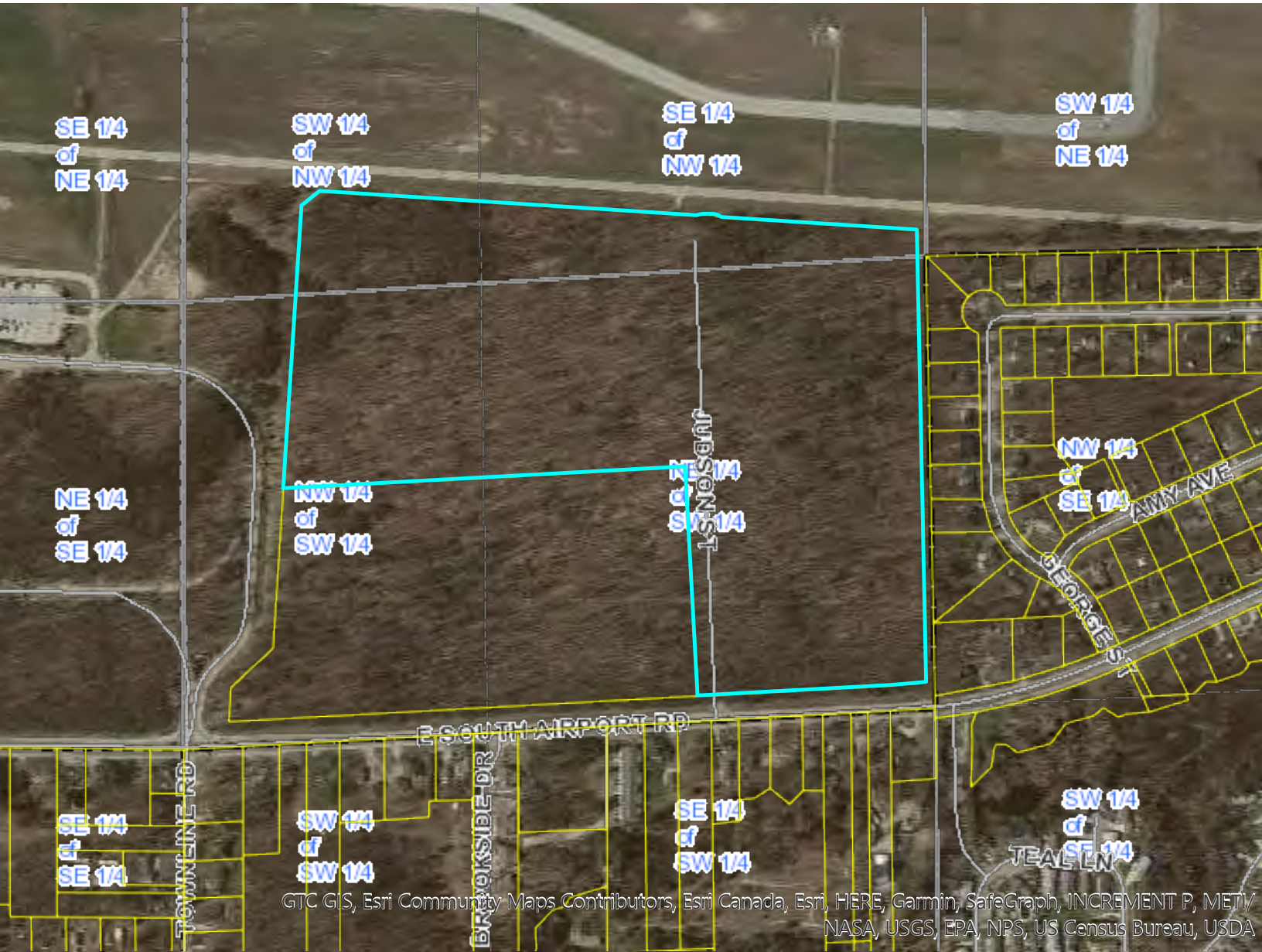
For current delinquent tax information or to pay your delinquent taxes online, [CLICK HERE](#) and you will be redirected to a third party site.

Property Sale Information

Sale information is not available for this property

Tax Description

PART OF THE N 1/2 OF THE SW 1/4 OF SEC 18, T27N, R10W, CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN, MORE FULLY DESCRIBED AS: COM W 1/4 COR OF SAID SEC 18; TH N 87°18'11" E, 333.91 FT ALONG THE E-W 1/4 LINE OF SAID SEC 18; TH S 04°32'49" W, 571 .95 FT TO POB; TH N 87° 42' 43" E, 1191.12 FT; TH S 2° 17' 17" E, 677.26 FT; TH N 87° 42' 53" E, 574.81 FT; TH N 86° 6' 29" E, 102.62 FT; TH N 0° 18' 36" W, 1334.58 FT; TH N 85° 26' 27" W, 1772.02 FT; TH S 51° 40' 33" W, 69.03 FT; TH S 4° 32' 35" W, 835.95 FT TO POB;



GTC GIS, Esri Community Maps Contributors, Esri Canada, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/ NASA, USGS, EPA, NPS, US Census Bureau, USDA

Woodcreek Blvd

Hawthorne Ln

Parcel 51-017-001-00

Grand Traverse County Property Information 2021 - June 1st PRE Update

Parcel: 51-017-001-00

Jurisdiction: City of Traverse City

Owner Name: GRAND TRAVERSE CO & LEELANAU CO

Property Address: THREE MILE RD
TRAVERSE CITY, MI 49686

Mailing Address: TRAVERSE CITY, MI 49686

2021 - June 1st PRE Update Property Information

Current Taxable Value: \$0

Last Year's Taxable Value: \$0

School District: 28010

Current Assessment: \$0

Last Year's Assessment: \$0

Current S.E.V.: \$0

Last Year's S.E.V.: \$0

Current P.R.E.*: 0%

* This percentage may pertain to exemptions other than the Principal Residence Exemption.

Current Property Class: 703 - Exempt County, City, Twp. or Village

Tax Information

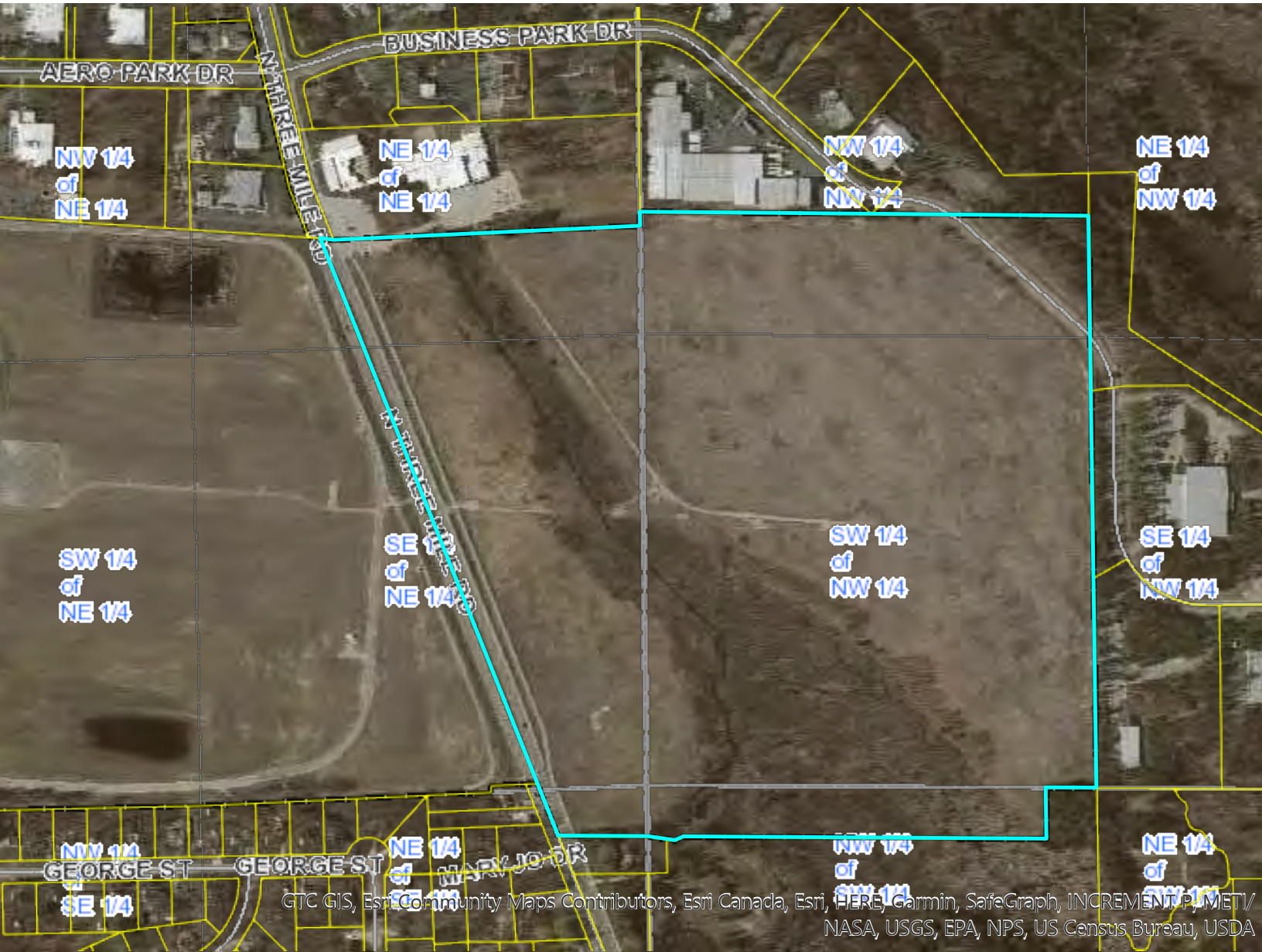
Taxable Year	Summer Tax Amount	Winter Tax Amount
2020	\$0.00	\$0.00
2019	\$0.00	\$0.00

Property Sale Information

Sale information is not available for this property

Tax Description

SW 1/4 OF NW 1/4 & S 360 FT OF NW 1/4 OF NW 1/4 ALSO N 151 FT OF NW 1/4 OF SW 1/4 SEC 17
T27N R10W EXC E 151 FT THEREOF N 151 FT OF NE 1/4 OF SE 1/4 LYING E OF C/L OF 3 MILE ROAD
SEC 18 T27N R10W



GTC GIS, Esri Community Maps Contributors, Esri Canada, Esri, HERE, Garmin, SafeGraph, INCREMENT P, MIETI/
NASA, USGS, EPA, NPS, US Census Bureau, USDA

Attachment 5

Analytical Data Tables

PFAS ANALYTICAL RESULTS SUMMARY - SOIL
Cherry Capital Airport, Traverse City, Michigan

October 22, 2020

ANALYTE	Chemical Abstract Services Number	Groundwater - Surface Water Interface Protection Criteria (June 2018)	Sample Results (µg/kg)									QC Results (ng/L)			
			SS-A1-01 18"	SS-A1-02 18"	SS-A3-01 18"	SS-A3-02 18"	SS-A3-03 18"	SS-A4-01 18"	SS-A4-02 18"	SS-A4-03 18"	SS-DUP-102220	QC-A3-FIELD	QC-SS-EQUIP1	QC-SS-EQUIP2	QC-Trip1-10222020
11CI-PF3OUdS	763051-92-9	-	<0.123	<0.122	<0.121	<0.12	<0.12	<0.127	<0.148	<0.151	<0.122	<4.21	<4.21	<4.21	<4.21
4:2 FTS	757124-72-4	-	<0.164	<0.163	<0.161	<0.16	<0.159	<0.169	<0.197	<0.202	<0.163	<1.52	<1.52	<1.52	<1.52
6:2 FTS	27619-97-2	-	4.24	3.39	0.247	4.12	<0.169	2.9	0.956	<0.214	<0.173	<1.79	<1.79	<1.79	<1.79
8:2 FTS	39108-34-4	-	32.3	22.1	<0.261	15.2	<0.259	13.3	<0.32	<0.328	<0.265	<1.63	<1.63	<1.63	<1.63
9CI-PF3ONS	756426-58-1	-	<0.154	<0.153	<0.151	<0.15	<0.149	<0.159	<0.184	<0.189	<0.153	<4.54	<4.54	<4.54	<4.54
ADONA	919005-14-4	-	<0.184	<0.184	<0.181	<0.18	<0.179	<0.19	<0.221	<0.227	<0.184	<2.63	<2.63	<2.63	<2.63
HFPO-DA	13252-13-6	-	<0.277	<0.275	<0.271	<0.27	<0.269	<0.285	<0.332	<0.341	<0.275	<12.3	<12.3	<12.3	<12.3
NETFOSAA	2991-50-6	-	<0.195	0.456	<0.191	<0.19	<0.189	<0.201	<0.234	<0.24	<0.194	<5.38	<5.38	<5.38	<5.38
NMeFOSAA	2355-31-9	-	<0.287	<0.286	<0.281	<0.28	<0.279	<0.296	<0.344	<0.353	<0.286	<4.6	<4.6	<4.6	<4.6
PFHpS	375-92-8	-	<0.174	<0.173	<0.171	<0.17	<0.169	<0.18	<0.209	<0.214	<0.173	<2.01	<2.01	<2.01	<2.01
PFBS	375-73-5	-	<0.123	<0.122	<0.121	<0.12	<0.12	<0.127	<0.148	<0.151	<0.122	<1.47	<1.47	<1.47	<1.47
PFBA	375-22-4	-	0.527	<0.133	<0.131	<0.13	<0.129	0.345	0.789	<0.164	<0.133	<2.13	<2.13	<2.13	<2.13
PFDS	335-77-3	-	<0.184	<0.184	<0.181	<0.18	<0.179	<0.19	<0.221	<0.227	<0.184	<2.17	<2.17	<2.17	<2.17
PFDA	335-76-2	-	1.95	3.71	<0.121	0.794	0.304	4.64	0.322	<0.151	<0.122	<1.65	<1.65	<1.65	<1.65
PFDoA	307-55-1	-	<0.205	<0.204	<0.201	5.31	<0.199	<0.211	<0.246	<0.252	<0.204	<2.45	<2.45	<2.45	<2.45
PFHpA	375-85-9	-	0.812	0.591	<0.131	<0.13	<0.129	0.422	0.802	<0.164	<0.133	<1.85	<1.85	<1.85	<1.85
PFHxS	355-46-4	-	<0.143	<0.143	<0.141	<0.14	<0.139	<0.148	<0.172	<0.177	<0.143	<1.64	<1.64	<1.64	<1.64
PFHxA	307-24-4	-	1.21	0.299	<0.151	<0.15	<0.149	1.02	1.8	<0.189	<0.153	<1.94	<1.94	<1.94	<1.94
PFNA	375-95-1	-	4.05	0.304	0.099	0.25	0.091	<0.095	1.19	<0.114	<0.092	<1.68	<1.68	<1.68	<1.68
FOSA	754-91-6	-	<0.123	3.93	<0.121	<0.12	<0.12	<0.127	<0.148	<0.151	<0.122	<2.63	<2.63	<2.63	<2.63
PFOS	1763-23-1	0.24	0.434	4.68	<0.181	<0.18	<0.179	<0.19	1.28	<0.227	<0.184	<1.7	<1.7	<1.7	<1.7
PFOA	335-67-1	10,000.00	2.91	1.19	<0.151	<0.15	<0.149	0.178	1.42	<0.189	<0.153	<1.8	<1.8	<1.8	<1.8
PFPeA	2706-90-3	-	1.26	0.201	<0.151	<0.15	<0.149	2.15	3.55	<0.189	<0.153	<2.35	<2.35	<2.35	<2.35
PFTeDA	376-06-7	-	<0.164	<0.163	<0.161	0.177	<0.159	<0.169	<0.197	<0.202	<0.163	<2.76	<2.76	<2.76	<2.76
PFTTrDA	72629-94-8	-	<0.225	<0.224	<0.221	14.4	0.266	<0.232	<0.271	<0.278	<0.224	<2.56	<2.56	<2.56	<2.56
PFUdA	2058-94-8	-	1.49	0.372	<0.141	6.53	0.976	0.175	<0.172	<0.177	<0.143	<1.86	<1.86	<1.86	<1.86
PFNS	68259-12-1	-	<0.143	<0.143	<0.141	<0.14	<0.139	<0.148	<0.172	<0.177	<0.143	<2.11	<2.11	<2.11	<2.11
PFPeS	2706-91-4	-	<0.184	<0.184	<0.181	<0.18	<0.179	<0.19	<0.221	<0.227	<0.184	<2.07	<2.07	<2.07	<2.07

NOTES:

The analytes are acronym designations for PFAS (per- and poly- fluoroalkyl substances).

The analytes are the Department of Environment, Great Lakes, and Energy, Michigan PFAS Action Response Team (EGLE-MPART) Minimum Analyte List as of October 1, 2019.

Analysis was by EPA Method 537 Modified Isotope Dilution.

Grey shaded value is above the laboratory detection limit. Yellow highlighted values exceed GSIP criteria.

The detection limit follows the less-than symbol.

The duplicate QC sample was split with sample SS-A4-03.

PFAS ANALYTICAL RESULTS SUMMARY - GROUNDWATER

Third Quarter 2021

Cherry Capital Airport, Traverse City, Michigan

Results presented chronologically in sample order.

ANALYTE	Chemical Abstract Services Number	Residential Drinking Water Criteria (12/21/2020) ng/L	QC-TRIP BLANK-08022021	QC-G.C.E.S. SUPPLY-080221	QC GW-EQUIP.1	GW-MW-201	GW-MW-1	GW-MW-202	GW-MW-46B
			8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/2/2021
				9:10:00 AM	10:15:00 AM	10:55:00 AM	11:43:00 AM	11:50:00 AM	12:51:00 PM
			ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
11CI-PF3OUdS	763051-92-9	-	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9
4:2 FTS	757124-72-4	-	<1.24	<1.24	<1.24	<1.24	<1.24	<1.24	<1.24
6:2 FTS	27619-97-2	-	<1.5	<1.5	<1.5	<1.5	2.14	<1.5	2.3
8:2 FTS	39108-34-4	-	<1.06	<1.06	<1.06	<1.06	<1.06	<1.06	<1.06
9CI-PF3ONS	756426-58-1	-	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9
ADONA	919005-14-4	-	<0.86	<0.86	<0.86	<0.86	<0.86	<0.86	<0.86
HFPO-DA	13252-13-6	370	<6.67	<6.67	<6.67	<6.67	<6.67	<6.67	<6.67
NEtFOSAA	2991-50-6	-	<1.58	<1.58	<1.58	<1.58	<1.58	<1.58	<1.58
NMeFOSAA	2355-31-9	-	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9
PFHpS	375-92-8	-	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22
PFBS	375-73-5	420	<0.62	<0.62	<0.62	<0.62	0.847	1.64	0.804
PFBA	375-22-4	-	<1.52	<1.52	<1.52	6.36	149	3.11	33
PFDS	335-77-3	-	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22
PFDA	335-76-2	-	<1.44	<1.44	<1.44	<1.44	<1.44	<1.44	<1.44
PFDoA	307-55-1	-	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3
PFHpA	375-85-9	-	<1.16	<1.16	<1.16	5.34	223	1.48	21.8
PFHxS	355-46-4	51	<1.24	<1.24	<1.24	<1.24	1.77	<1.24	1.62
PFHxA	307-24-4	400,000	<0.94	<0.94	<0.94	7.51	373	2.72	76.1
PFNA	375-95-1	6	<0.98	<0.98	<0.98	<0.98	15.9	<0.98	<0.98
FOSA	754-91-6	-	<0.74	1.5	<0.74	<0.74	<0.74	<0.74	<0.74
PFOS	1763-23-1	16	<0.76	0.957	<0.76	3.73	1.77	6.17	<0.76
PFOA	335-67-1	8	<0.84	<0.84	<0.84	14.6	1,120	3.89	4.42
PFPeA	2706-90-3	-	<0.88	<0.88	<0.88	16	707	6.1	139
PFTeDA	376-06-7	-	<1.14	<1.14	<1.14	<1.14	<1.14	<1.14	<1.14
PFTTrDA	72629-94-8	-	<1.23	<1.23	<1.23	<1.23	<1.23	<1.23	<1.23
PFUdA	2058-94-8	-	<1.24	<1.24	<1.24	<1.24	5.52	<1.24	<1.24
PFNS	68259-12-1	-	<1.74	<1.74	<1.74	<1.74	<1.74	<1.74	<1.74
PFPeS	2706-91-4	-	<1.02	<1.02	<1.02	<1.02	<1.02	<1.02	<1.02

NOTES:

The analytes are acronym designations for PFAS (per- and poly- fluoroalkyl substances).
 The analytes are the EGLE-MPART Minimum Analyte List as of October 1, 2019.
 Analysis was by EPA Method 537 Modified Isotope Dilution.
 Grey shaded values are above the laboratory detection limit.
 Yellow highlighted values exceed residential drinking water criteria.
 The detection limit follows the less-than symbol.

PFAS ANALYTICAL RESULTS SUMMARY - GROUNDWATER

Third Quarter 2021

Cherry Capital Airport, Traverse City, Michigan

Results presented chronologically in sample order.

ANALYTE	Chemical Abstract Services Number	Residential Drinking Water Criteria (12/21/2020) ng/L	GW-MW-46A	GW-MW-104	GW-MW-43A	GW-MW-501	GW-MW-503	GW-DUP-080221	QC-TRIP BLANK-08032021	GW-MW-304	
			8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/2/2021	8/3/2021	8/3/2021
			1:34:00 PM	2:20:00 PM	2:22:00 PM	3:20:00 PM	4:15:00 PM	4:15:00 PM		11:10:00 AM	
			ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
11CI-PF3OUdS	763051-92-9	-	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	
4:2 FTS	757124-72-4	-	<1.24	<1.24	<1.24	<1.24	<1.24	<1.24	<1.24	<1.24	
6:2 FTS	27619-97-2	-	4.23	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	
8:2 FTS	39108-34-4	-	<1.06	<1.06	<1.06	<1.06	<1.06	<1.06	<1.06	<1.06	
9CI-PF3ONS	756426-58-1	-	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	
ADONA	919005-14-4	-	<0.86	<0.86	<0.86	<0.86	<0.86	<0.86	<0.86	<0.86	
HFPO-DA	13252-13-6	370	<6.67	<6.67	<6.67	<6.67	<6.67	<6.67	<6.67	<6.67	
NEtFOSAA	2991-50-6	-	<1.58	<1.58	<1.58	<1.58	<1.58	<1.58	<1.58	<1.58	
NMeFOSAA	2355-31-9	-	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	
PFHpS	375-92-8	-	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	
PFBS	375-73-5	420	0.874	1.08	0.854	1.93	0.72	0.89	<0.62	0.997	
PFBA	375-22-4	-	76.3	15.1	78	12.6	2.59	2.9	<1.52	10.3	
PFDS	335-77-3	-	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	
PFDA	335-76-2	-	<1.44	<1.44	<1.44	<1.44	<1.44	<1.44	<1.44	<1.44	
PFDoA	307-55-1	-	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	
PFHpA	375-85-9	-	66.9	26.4	256	13.4	<1.16	<1.16	<1.16	2.79	
PFHxS	355-46-4	51	1.59	1.39	1.26	26.9	1.7	1.85	<1.24	2.3	
PFHxA	307-24-4	400,000	284	24.2	210	22.4	1.96	2.04	<0.94	20	
PFNA	375-95-1	6	17.1	<0.98	5.46	1.63	<0.98	<0.98	<0.98	<0.98	
FOSA	754-91-6	-	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	1.23	
PFOS	1763-23-1	16	2.83	1.81	1.00	6.24	<0.76	<0.76	<0.76	2.72	
PFOA	335-67-1	8	145	6.73	587	42.3	<0.84	<0.84	<0.84	2.14	
PFPeA	2706-90-3	-	396	38.9	355	23.4	5.2	5.8	<0.88	28.1	
PFTeDA	376-06-7	-	<1.14	<1.14	<1.14	<1.14	<1.14	<1.14	<1.14	<1.14	
PFTTrDA	72629-94-8	-	<1.23	<1.23	<1.23	<1.23	<1.23	<1.23	<1.23	<1.23	
PFUdA	2058-94-8	-	3.61	<1.24	13.3	<1.24	<1.24	<1.24	<1.24	<1.24	
PFNS	68259-12-1	-	<1.74	<1.74	<1.74	<1.74	<1.74	<1.74	<1.74	<1.74	
PFPeS	2706-91-4	-	<1.02	<1.02	<1.02	<1.02	<1.02	<1.02	<1.02	<1.02	

NOTES:

The analytes are acronym designations for PFAS (per- and poly- fluoroalkyl substances).
 The analytes are the EGLE-MPART Minimum Analyte List as of October 1, 2019.
 Analysis was by EPA Method 537 Modified Isotope Dilution.
 Grey shaded values are above the laboratory detection limit.
 Yellow highlighted values exceed residential drinking water criteria.
 The detection limit follows the less-than symbol.

PFAS ANALYTICAL RESULTS SUMMARY - GROUNDWATER

Third Quarter 2021

Cherry Capital Airport, Traverse City, Michigan

Results presented chronologically in sample order.

ANALYTE	Chemical Abstract Services Number	Residential Drinking Water Criteria (12/21/2020) ng/L	QC-GW-FIELD1	GW-MW-406	GW-MW-405	QC-GW-EQUIP.2	GW-MW-303	GW-DUP-080321	GW-MW-504	GW-MW-103	
			8/3/2021	8/3/2021	8/3/2021	8/3/2021	8/3/2021	8/3/2021	8/3/2021	8/3/2021	8/4/2021
			11:09:00 AM	12:10:00 PM	1:30:00 PM	2:55:00 PM	3:01:00 PM	3:01:00 PM	3:35:00 PM	11:30:00 AM	
			ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	
11CI-PF3OUdS	763051-92-9	-	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	
4:2 FTS	757124-72-4	-	<1.24	<1.24	<1.24	<1.24	<1.24	<1.24	<1.24	<1.24	
6:2 FTS	27619-97-2	-	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	6.01	
8:2 FTS	39108-34-4	-	<1.06	<1.06	<1.06	<1.06	<1.06	<1.06	<1.06	<1.06	
9CI-PF3ONS	756426-58-1	-	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	
ADONA	919005-14-4	-	<0.86	<0.86	<0.86	<0.86	<0.86	<0.86	<0.86	<0.86	
HFPO-DA	13252-13-6	370	<6.67	<6.67	<6.67	<6.67	<6.67	<6.67	<6.67	<6.67	
NEtFOSAA	2991-50-6	-	<1.58	<1.58	<1.58	<1.58	<1.58	<1.58	<1.58	<1.58	
NMeFOSAA	2355-31-9	-	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	
PFHpS	375-92-8	-	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	
PFBS	375-73-5	420	<0.62	1.02	2.51	<0.62	3.56	3.67	3.51	3.06	
PFBA	375-22-4	-	<1.52	6.62	8.17	<1.52	19.8	19.8	11.8	18	
PFDS	335-77-3	-	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	<1.22	
PFDA	335-76-2	-	<1.44	<1.44	<1.44	<1.44	<1.44	<1.44	<1.44	<1.44	
PFDoA	307-55-1	-	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	
PFHpA	375-85-9	-	<1.16	6.91	9.19	<1.16	28.5	27.8	5.16	33.1	
PFHxS	355-46-4	51	<1.24	<1.24	24.5	<1.24	8.26	7.83	6.2	39.4	
PFHxA	307-24-4	400,000	<0.94	4.7	9.12	<0.94	34.2	33.2	5.05	27.1	
PFNA	375-95-1	6	<0.98	<0.98	<0.98	<0.98	24.3	24	2.67	<0.98	
FOSA	754-91-6	-	<0.74	0.998	<0.74	<0.74	<0.74	<0.74	<0.74	<0.74	
PFOS	1763-23-1	16	<0.76	<0.76	1.53	<0.76	45.9	47.4	20.6	0.779	
PFOA	335-67-1	8	<0.84	2.16	28.8	<0.84	45.9	44.7	17.1	85.6	
PFPeA	2706-90-3	-	<0.88	7.93	6.81	<0.88	42.5	39.4	4.58	38	
PFTeDA	376-06-7	-	<1.14	<1.14	<1.14	<1.14	<1.14	<1.14	<1.14	<1.14	
PFTTrDA	72629-94-8	-	<1.23	<1.23	<1.23	<1.23	<1.23	<1.23	<1.23	<1.23	
PFUdA	2058-94-8	-	<1.24	<1.24	<1.24	<1.24	<1.24	<1.24	<1.24	<1.24	
PFNS	68259-12-1	-	<1.74	<1.74	<1.74	<1.74	<1.74	<1.74	<1.74	<1.74	
PFPeS	2706-91-4	-	<1.02	<1.02	<1.02	<1.02	1.05	<1.02	<1.02	1.82	

NOTES:

The analytes are acronym designations for PFAS (per- and poly- fluoroalkyl substances).
 The analytes are the EGLE-MPART Minimum Analyte List as of October 1, 2019.
 Analysis was by EPA Method 537 Modified Isotope Dilution.
 Grey shaded values are above the laboratory detection limit.
 Yellow highlighted values exceed residential drinking water criteria.
 The detection limit follows the less-than symbol.

PFAS ANALYTICAL RESULTS SUMMARY - GROUNDWATER

Third Quarter 2021

Cherry Capital Airport, Traverse City, Michigan

Results presented chronologically in sample order.

ANALYTE	Chemical Abstract Services Number	Residential Drinking Water Criteria (12/21/2020) ng/L	GW-MW-101	GW-MW-102	GW-MW-404
			8/4/2021	8/4/2021	8/4/2021
			12:50:00 PM	1:45:00 PM	3:00:00 PM
			ng/L	ng/L	ng/L
11CI-PF3OUdS	763051-92-9	-	<0.9	<0.9	<0.9
4:2 FTS	757124-72-4	-	7.02	21.1	47.5
6:2 FTS	27619-97-2	-	7,640	4,850	8,570
8:2 FTS	39108-34-4	-	766	5,400	6,780
9CI-PF3ONS	756426-58-1	-	<0.9	<0.9	<0.9
ADONA	919005-14-4	-	<0.86	<0.86	<0.86
HFPO-DA	13252-13-6	370	<6.67	<6.67	<6.67
NEtFOSAA	2991-50-6	-	<1.58	<1.58	<1.58
NMeFOSAA	2355-31-9	-	<0.9	1.51	1.82
PFHpS	375-92-8	-	1.24	10.5	<1.22
PFBS	375-73-5	420	0.934	2.57	1.67
PFBA	375-22-4	-	440	872	1,310
PFDS	335-77-3	-	<1.22	<1.22	<1.22
PFDA	335-76-2	-	9.88	192	758
PFDoA	307-55-1	-	<1.3	<1.3	<1.3
PFHpA	375-85-9	-	437	540	695
PFHxS	355-46-4	51	1.8	4.2	7.98
PFHxA	307-24-4	400,000	1,300	2050	2,930
PFNA	375-95-1	6	50.4	669	542
FOSA	754-91-6	-	<0.74	6.35	1.03
PFOS	1763-23-1	16	1.41	631	172
PFOA	335-67-1	8	1,450	762	1,250
PFPeA	2706-90-3	-	1,580	3,900	4,850
PFTeDA	376-06-7	-	<1.14	<1.14	<1.14
PFTTrDA	72629-94-8	-	<1.23	<1.23	<1.23
PFUdA	2058-94-8	-	<1.24	4.66	21
PFNS	68259-12-1	-	<1.74	<1.74	<1.74
PFPeS	2706-91-4	-	<1.02	<1.02	<1.02

NOTES:

The analytes are acronym designations for PFAS (per- and poly- fluoroalkyl substances).
 The analytes are the EGLE-MPART Minimum Analyte List as of October 1, 2019.
 Analysis was by EPA Method 537 Modified Isotope Dilution.
 Grey shaded values are above the laboratory detection limit.
 Yellow highlighted values exceed residential drinking water criteria.
 The detection limit follows the less-than symbol.

Client: Northwest Regional Airport Authority
 Site Name: Cherry Capital Airport LUST Facility

LABORATORY ANALYTICAL RESULTS: SOIL
Site Assessment
CRITERIA: SOIL - Residential

Most Restrictive Relevant Screening Level	CAS #
100(HBDW)	71432
16,000(HBDW)	108883
1,500(HBDW)	100414
5,600(HBDW)	1330207
2,100(HBDW)	95636
1,800(HBDW)	108678
800(HBDW)	1634044
35,000(HBDW)	91203
57,000(HBDW)	91576
20(HBDW)	106934
100(HBDW)	107062
400,000(DC)	7439921

Sample ID	SB-108 (7.25')	SB-109 (14')	SB-112 (2')	SB-113 (18')	SB-115 (16')	SB-116 (7.5')	SB-117 (7.5')	
Sample Depth (feet BGS)	7.25	14.0	2	15.0	16.0	7.5	7.5	
Date Collected	08/04/20	08/04/20	08/04/20	08/04/20	08/05/20	08/05/20	08/05/20	
Collection Method	Split Spoon	Split Spoon	Post Hole Digger	Split Spoon	Split Spoon	Split Spoon	Split Spoon	
VOLATILES								
Analytical Method No.	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	
Date Analyzed	08/10/20	08/10/20	08/10/20	08/10/20	08/10/20	08/10/20	08/10/20	
CONSTITUENT (µg/kg)	Conc	LOD	Conc	LOD	Conc	LOD	Conc	LOD
Benzene (l)	nd	50	--	50	nd	50	nd	50
Toluene (l)	nd	50	--	50	nd	50	nd	50
Ethylbenzene (l)	nd	50	--	50	nd	50	nd	50
Xylenes (l)	nd	150	--	150	nd	150	nd	150
1,2,4-Trimethylbenzene (l)	nd	50	--	50	480	50	--	50
1,3,5-Trimethylbenzene (l)	nd	50	--	50	1,400	50	--	50
Methyl-tert-butyl ether (MTBE)	nd	250	--	250	nd	250	--	250
Naphthalene	nd	250	--	250	510	250	--	250
2-Methylnaphthalene	nd	250	--	250	3,800	250	--	250
Ethylene dibromide	nd	20	--	20	nd	20	--	20
1,2-Dichloroethane (l)	nd	50	--	50	nd	50	--	50
TPH/GRO	--	--	9,000	4,000	--	--	nd	4,000
150,000	4,000	--	--	--	--	--	--	--
METALS								
Analytical Method No.	EPA 6020A	EPA 6020A	EPA 6020A	EPA 6020A	EPA 6020A	EPA 6020A	EPA 6020A	
Date Analyzed	08/12/20	08/12/20	08/12/20	08/12/20	08/12/20	08/12/20	08/12/20	
CONSTITUENT (µg/kg)	Conc	LOD	Conc	LOD	Conc	LOD	Conc	LOD
Lead (B)	nd	270	--	250	3,200	250	--	250
--	--	--	--	--	--	--	nd	250
nd	250	nd	250	nd	200			

Criteria as published in Rule R299.5746,
 Part 201, P.A. 451 of 1994, as amended and
 updated as of 6/25/18, which are used as Risk-Based
 Screening Levels (RBSLs) at Part 213 (LUST) sites.
 Shaded value exceeds most restrictive relevant screening levels
 The relevant screening levels are:
 Health-Based Drinking Water (HBDW)
 Indoor Air Inhalation (IAI)
 Direct Contact (DC)
 Michigan Default Background (DBG)
 nd = not detected
 -- = not analyzed
 MDL = method detection limit
 LOD = limit of detection

Client: **NRAA**
 Project: **Cherry Capital Airport - Former UST Project**

VOC Laboratory Analytical Results - Groundwater
 (Units = µg/L unless otherwise noted)

Location	CAS Number	Constituent	08/02/21	Part 213 Health-based DW RBSL	Part 213 Aesthetic DW RBSL
MW-1 604.65 - 609.65	71432	Benzene	<1	5	-
	108883	Toluene	<1	790	-
	100414	Ethylbenzene	<1	700	74
	1330207	Xylenes	<3	10,000	280
	95636	1,2,4-TMB	<1	2,900	63
	108678	1,3,5-TMB	<1	2,900	72
	91203	Naphthalene	<5	520	-
	91576	2-Methylnaphthalene	<5	260	-
	1634044	MTBE	<5	690	40
	106934	1,2-Dibromoethane	<1	0.05	-
	107062	1,2-Dichloroethane	<1	5	-
	7439921	Lead, Total	<1	4	-
	MW-4 601.01 - 606.01	71432	Benzene	<1	5
108883		Toluene	<1	790	-
100414		Ethylbenzene	<1	700	74
1330207		Xylenes	<3	10,000	280
95636		1,2,4-TMB	5.3	2,900	63
108678		1,3,5-TMB	<1	2,900	72
91203		Naphthalene	<5	520	-
91576		2-Methylnaphthalene	<5	260	-
1634044		MTBE	<5	690	40
106934		1,2-Dibromoethane	<1	0.05	-
107062		1,2-Dichloroethane	<1	5	-
7439921		Lead, Total	<1	4	-
MW-5 602.15 - 607.15		71432	Benzene	<1	5
	108883	Toluene	<1	790	-
	100414	Ethylbenzene	<1	700	74
	1330207	Xylenes	<3	10,000	280
	95636	1,2,4-TMB	<1	2,900	63
	108678	1,3,5-TMB	<1	2,900	72
	91203	Naphthalene	<5	520	-
	91576	2-Methylnaphthalene	<5	260	-
	1634044	MTBE	<5	690	40
	106934	1,2-Dibromoethane	<1	0.05	-
	107062	1,2-Dichloroethane	<1	5	-
	7439921	Lead, Total	<1	4	-

VOC Laboratory Analytical Results - Groundwater
 (Units = µg/L unless otherwise noted)

Location	CAS Number	Constituent	08/02/21	Part 213 Health-based DW RBSL	Part 213 Aesthetic DW RBSL
MW-6 13'	71432	Benzene	<1	5	-
	108883	Toluene	<1	790	-
	100414	Ethylbenzene	<1	700	74
	1330207	Xylenes	<3	10,000	280
	95636	1,2,4-TMB	<1	2,900	63
	108678	1,3,5-TMB	<1	2,900	72
	91203	Naphthalene	<5	520	-
	91576	2-Methylnaphthalene	<5	260	-
	1634044	MTBE	<5	690	40
	106934	1,2-Dibromoethane	<1	0.05	-
	107062	1,2-Dichloroethane	<1	5	-
	7439921	Lead, Total	<1	4	-
	MW-41A 22'	71432	Benzene	<1	5
108883		Toluene	<1	790	-
100414		Ethylbenzene	<1	700	74
1330207		Xylenes	<3	10,000	280
95636		1,2,4-TMB	<1	2,900	63
108678		1,3,5-TMB	<1	2,900	72
91203		Naphthalene	<5	520	-
91576		2-Methylnaphthalene	<5	260	-
1634044		MTBE	<5	690	40
106934		1,2-Dibromoethane	<1	0.05	-
107062		1,2-Dichloroethane	<1	5	-
7439921		Lead, Total	<1	4	-
MW-41B 33'		71432	Benzene	<1	5
	108883	Toluene	<1	790	-
	100414	Ethylbenzene	<1	700	74
	1330207	Xylenes	<3	10,000	280
	95636	1,2,4-TMB	<1	2,900	63
	108678	1,3,5-TMB	<1	2,900	72
	91203	Naphthalene	<5	520	-
	91576	2-Methylnaphthalene	<5	260	-
	1634044	MTBE	<5	690	40
	106934	1,2-Dibromoethane	<1	0.05	-
	107062	1,2-Dichloroethane	<1	5	-
	7439921	Lead, Total	<1	4	-

Client: **NRAA**
 Project: **Cherry Capital Airport - Former UST Project**

VOC Laboratory Analytical Results - Groundwater
 (Units = µg/L unless otherwise noted)

Location	CAS Number	Constituent	08/02/21	Part 213 Health-based DW RBSL	Part 213 Aesthetic DW RBSL
MW-43A 17'	71432	Benzene	<1	5	-
	108883	Toluene	19	790	-
	100414	Ethylbenzene	57	700	74
	1330207	Xylenes	1,300	10,000	280
	95636	1,2,4-TMB	460	2,900	63
	108678	1,3,5-TMB	160	2,900	72
	91203	Naphthalene	61	520	-
	91576	2-Methylnaphthalene	22	260	-
	1634044	MTBE	<5	690	40
	106934	1,2-Dibromoethane	<1	0.05	-
	107062	1,2-Dichloroethane	<1	5	-
	7439921	Lead, Total	<1	4	-
	MW-44A 17'	71432	Benzene	<1	5
108883		Toluene	<1	790	-
100414		Ethylbenzene	2	700	74
1330207		Xylenes	170	10,000	280
95636		1,2,4-TMB	590	2,900	63
108678		1,3,5-TMB	390	2,900	72
91203		Naphthalene	23	520	-
91576		2-Methylnaphthalene	55	260	-
1634044		MTBE	<5	690	40
106934		1,2-Dibromoethane	<1	0.05	-
107062		1,2-Dichloroethane	<1	5	-
7439921		Lead, Total	<1	4	-
MW-45A 17'		71432	Benzene	<1	5
	108883	Toluene	<1	790	-
	100414	Ethylbenzene	<1	700	74
	1330207	Xylenes	<3	10,000	280
	95636	1,2,4-TMB	34.0	2,900	63
	108678	1,3,5-TMB	430.0	2,900	72
	91203	Naphthalene	<5	520	-
	91576	2-Methylnaphthalene	90	260	-
	1634044	MTBE	<5	690	40
	106934	1,2-Dibromoethane	<1	0.05	-
	107062	1,2-Dichloroethane	<1	5	-
	7439921	Lead, Total	<1	4	-

VOC Laboratory Analytical Results - Groundwater
 (Units = µg/L unless otherwise noted)

Location	CAS Number	Constituent	08/02/21	Part 213 Health-based DW RBSL	Part 213 Aesthetic DW RBSL
MW-46A 21'	71432	Benzene	<1	5	-
	108883	Toluene	<1	790	-
	100414	Ethylbenzene	<1	700	74
	1330207	Xylenes	<3	10,000	280
	95636	1,2,4-TMB	<1	2,900	63
	108678	1,3,5-TMB	<1	2,900	72
	91203	Naphthalene	<5	520	-
	91576	2-Methylnaphthalene	<5	260	-
	1634044	MTBE	<5	690	40
	106934	1,2-Dibromoethane	<1	0.05	-
	107062	1,2-Dichloroethane	<1	5	-
	7439921	Lead, Total	3.5	4	-
	MW-46B 31'	71432	Benzene	<1	5
108883		Toluene	<1	790	-
100414		Ethylbenzene	<1	700	74
1330207		Xylenes	<3	10,000	280
95636		1,2,4-TMB	<1	2,900	63
108678		1,3,5-TMB	<1	2,900	72
91203		Naphthalene	<5	520	-
91576		2-Methylnaphthalene	<5	260	-
1634044		MTBE	<5	690	40
106934		1,2-Dibromoethane	<1	0.05	-
107062		1,2-Dichloroethane	<1	5	-
7439921		Lead, Total	<1	4	-

Grey indicates parameter was detected but did not exceed listed criteria.
Orange indicates contaminant exceeds Aesthetic Drinking Water Criterion.
Yellow indicates contaminant exceeds Health-Based Drinking Water (DW) Criterion.

"-" means analysis was not performed.
 "nd" means result was not detected above laboratory limit of detection.
 "ID" means insufficient data to develop criterion.
 "NA" means a criterion or value is not available or, in the case of background, not applicable.
 "NLL" means hazardous substance is not likely to leach under most soil conditions.
 "NLV" means hazardous substance is not likely to volatilize under most conditions.
 Letters in criteria columns refer to Footnotes of the Criteria/RBSLs tables.

Attachment 6
Phase I ESA Report



Gosling Czubak
engineering sciences, inc.

Phase I Environmental Site Assessment

Cherry Capital Airport
Northwest Regional Airport Authority
Traverse City, Michigan

September 29, 2021

Prepared For:
Northwest Regional Airport Authority
727 Fly Don't Drive
Traverse City, MI 49686

Gosling Czubak Project # 2021630002.00

CIVIL ENGINEERING

SURVEYING

ENVIRONMENTAL SERVICES

CONSTRUCTION SERVICES

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ATTACHMENTS

Att. 1	Property Tax Record Card
Att. 2	Site Location Map
Att. 3	Site Reconnaissance Notes & Photographs
Att. 4	User Questionnaire
Att. 5	EDR Environmental Database Search Report

Att. 6 Aerial Photographs

Att. 7 Environmental Assessment Questionnaire / Owner Interview

1.0 EXECUTIVE SUMMARY

Gosling Czubak Engineering Sciences, Inc. (Gosling Czubak) conducted a Phase I Environmental Site Assessment (ESA) for the subject property on behalf of the Northwest Regional Airport Authority (NRAA). The subject property is currently jointly owned by Leelanau and Grand Traverse counties and occupied by Cherry Capital Airport (TVC), air travel related businesses, and private air travel related uses (i.e. hangars for private planes).

This assessment has revealed evidence of eighteen recognized environmental conditions (RECs) associated with the subject property. The RECs identified are related to current and past storage, use, and disposal of hazardous substances and petroleum products on the subject property. During preparation of this Phase I ESA, evidence of seven existing underground storage tanks (UST) and nine existing above ground storage tanks (AST) were identified. Other RECs include the current and past use of Class B aqueous film forming foam (AFFF) and deicing solutions. AFFF is known to contain per- and polyfluoroalkyl substances (PFAS). Although PFAS are not CERCLA regulated substances, the State of Michigan has identified PFAS as a hazardous substance under Part 201 of NREPA. Deicing solutions, which based upon information obtained during the site reconnaissance is primarily propylene glycol at this time, has the potential to contain other hazardous substances^{1,2} and potentially cause impact to groundwater and surface waters².

The Phase I ESA ***has revealed evidence*** of four historical recognized environmental conditions (HRECs) associated with the subject property. These HRECs are primarily related to closed petroleum UST and leaking UST (LUST) sites on the property. No evidence of controlled recognized environmental conditions (CRECs) was noted during completion of this Phase I ESA.

¹ *Technical Fact Sheet – 1,4-Dioxane*. U.S. EPA. January 2013.

² *Environmental Impact and Benefit Assessment for the Final Effluent Limitation Guidelines and Standards for the Airport Deicing Category*. U.S. EPA. April 2012.

2.0 INTRODUCTION

2.1 Purpose and Definitions

This report presents the findings of a Phase I Environmental Site Assessment (ESA) of the Cherry Capital Airport, located at 727 Fly Don't Dr, in the City of Traverse City, Grand Traverse County, Michigan. This assessment was performed to provide an independent, professional opinion regarding the presence of a *REC*³, *CREC*⁴, or *HREC*⁵ in connection with the site.

The guideline used for the definitions of a hazardous substance and petroleum product were obtained from state and federal statutes. Section 20101(1)(x) of the Natural Resources and Environmental Protection Act (NREPA, P.A. 451 of 1994, as amended) defines hazardous substance as:

- i. A substance which poses an unacceptable risk to the public health, safety, or welfare, or the environment, considering the fate of the material, dose-response, toxicity, or adverse impact on natural resources;
- ii. Hazardous substances as defined in the comprehensive environmental response, compensation, and liability act of 1980, 42 USC 9601 to 9675;
- iii. Hazardous waste defined in Part 111 (NREPA); and
- iv. Petroleum as described as a regulated substance in Section 231303 of Part 213 (NREPA).

2.2 Scope of Services

The scope of work for this Phase I ESA was based on the scope and limitations of ASTM Standard Practice E 1527-13 and included the following:

³ Definition of REC per ASTM E1527-13: Recognized Environmental Conditions - the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions.

⁴ Definition of CREC per ASTM E1527-13: Controlled REC – a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

⁵ Definition of HREC per ASTM E1527-13: Historical REC – a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls.

Evaluation of Historical Property Usage

Material from county, state, and federal records was researched and reviewed to determine if any hazardous materials incidents, including the storage, treatment, disposal, or release of hazardous materials or petroleum products, had occurred on or in the area of the subject property.

Others who were knowledgeable about the property or local area and who were made available to Gosling Czubak were interviewed in an effort to determine prior use of the subject property, as well as to assess whether hazardous substances had been used or released at the site.

Aerial photographs of the area were reviewed to assess historical uses of the subject and adjoining properties.

Site Reconnaissance

A site visit was completed to assess current conditions, including identification of observable onsite hazardous or harmful materials and to evaluate potential indicators of hazardous substance or petroleum product storage, use, generation, or release on the subject property or areas or structures on adjoining properties. Observations and assessments of stressed vegetation, evidence of waste discharge or collection, fill materials, sink holes, wells, etc. are included within this report, if they were observed.

Report Preparation

The scope of services includes preparation of this report to present details regarding the contacts made, information obtained, data findings, and other pertinent information. Based upon findings, the report includes an opinion regarding the potential for environmental impairment associated with the subject property.

2.3 Significant Assumptions

No significant assumptions were relied upon to form the conclusions of this report.

2.4 Limitations and Exceptions

The subject property covers an area of over 1,000 acres, has a perimeter of ± 10 miles, and is occupied by multiple tenants. While a good faith effort was made by Gosling Czubak to visit the entire subject property and observe the uses of adjoining parcels, portions of the property were not observed, either due to physical constraints (i.e. heavily wooded), administrative constraints (i.e. limited security access), or budgetary and time constraints. Gosling Czubak personnel were not able to obtain access to the following areas of the subject property during completion of the site visits:

- Air carrier ramp located north of the main terminal building (part of secure identification display area {SIDA})
- The air traffic control tower and vicinity within the fence controlled by the Federal Aviation Administration (FAA) at 1275 Airport Access Road
- The line shack, located near the general aviation terminal at 1200 Airport Access Road, which is also controlled by the FAA
- Wetlands/forested portions of south clear zone (NE $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 24, T27N, R11W)
- Stream corridor and wetland/forested portions of east clear zone (SW $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 17 and NE $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 18, T27N, R10W)
- The movement areas of the air operations area (i.e. on the runways)

The Northwestern Regional Airport Commission (NRAC) was identified as the only major occupant⁶ on the property and, therefore, was the only tenant interviewed.

⁶ Definition of Major Occupant per ASTM E1527-13: those tenants, subtenants, or other persons or entities each of which uses at least 40 % of the leasable area of the property or any anchor tenant when the property is a shopping center.

2.5 Special Terms and Conditions

Our client, NRAA, has requested an environmental site assessment prior to purchasing the subject property. This assessment does not include a formal evaluation of wetlands, floodplains, radon, asbestos, or lead-based paints.

Information obtained for this ESA is only relevant as of the date of records review and of the site reconnaissance conducted between July 15 and August 11, 2021. The information contained herein is only valid as of the date of the report and may require revisions to reflect updated records or subsequent site visits.

The client should recognize that this report is not a comprehensive site characterization and should not be construed as such. The findings and conclusions presented in this report are predicated on the results of site reconnaissance, review of regulatory records, historical usage of the site, and conversations with knowledgeable parties. The absence of significant indicators suggesting that hazardous substances or petroleum products have impacted the site does not preclude their presence. Therefore, this report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of this ESA is made, either expressed or implied, in any correspondence, consultation, or within the content of this report.

It is possible that, even with conformance to the process requirements of ASTM E1527-13, conditions could exist on or near the subject property which could not be identified within the scope of the assignment or are not reasonably identifiable from readily available information.

This report is only intended to assist the user in making a reasonable assessment of risk with respect to potential environmental impact at the subject property. The information given in this report is based upon a review of documents and information reasonably available concerning the subject property, as presented. Portions of this assessment are based upon information that has been reported by persons claiming to have knowledge of the property. No warranty, either expressed or implied, is made as to the reliability or accuracy of the information obtained from outside sources.

2.6 User Reliance

This report is prepared for the benefit of, and pursuant to an agreement between, Gosling Czubak Engineering Sciences, Inc. and its client, NRAA. Any use of this report by additional parties, or for any purposes other than that stated within this report, is expressly prohibited and not anticipated by Gosling Czubak. The use of, or reliance upon, this report by additional parties does not make any such parties a beneficiary of the agreement(s) between Gosling Czubak and its client and is undertaken at such party's own risk, unless otherwise stated. No expressed or implied warranties, guarantees, or representations are made to any such additional parties.

3.0 SITE DESCRIPTION

3.1 Location and Legal Description

The subject property is in Sections 12, 13, 14, and 24 of township 27N, range 11W and Sections 17 and 18 of township 27N, range 10W, the City of Traverse City, Grand Traverse County, Michigan. The property is commonly known as Cherry Capital Airport (TVC) and encompasses several addresses. The subject property includes four parcels with parcel identification numbers 51-113-002-02, 51-113-002-03, 51-113-002-04, and 51-017-001-00. The properties' tax descriptions are included in Attachment 1. A topographic site location map is included in Attachment 2.

3.2 Site and Vicinity General Characteristics

The subject property is located within the municipal limits of Traverse City and is surrounded by industrial, commercial, and residential properties. Mitchel Creek runs through the east clear zone of the property from southeast to northwest. The subject property is currently improved with several buildings of various types. Access to the subject property is provided by service gates, private businesses, and the airport terminal building.

3.3 Current Use of the Subject Property

The subject property is currently occupied by Cherry Capital Airport (TVC), air travel related businesses, private hangars, retail property, vacant land for aircraft safety areas, and vacant, developable parcels. Photographs depicting current property conditions and current occupants/uses are presented in the field forms include as Attachment 3. Additional information regarding the current uses of the property is provided in Section 6.

3.4 Descriptions of Structures, Roads and other Improvements

The subject property is improved with various structures and roads. Construction methods and dates for the buildings vary throughout the subject property. Roads are completed using asphalt and concrete paving, and gravel. Utilities available at the subject property include electricity, natural gas, cable, municipal water, and municipal sanitary sewer. According to a current property representative, the main terminal building, located south of the runways, opened in 2004.

3.5 Current Uses of Adjoining Properties

The adjoining properties consist of industrial, commercial, and residential. The most notable adjoining properties include the US Coast Guard Station – Air Station Traverse City, US Army Reserve, and Century Inc. metal treating to the north; and, automotive repair and metal fabrication shops to the west.

4.0 USER PROVIDED INFORMATION

Mr. Kevin Klein (CEO, NRAA) completed the User Questionnaire provided by Gosling Czubak, which contains information pursuant to the user's responsibility described in Section 6.0 of ASTM Standard E1527-13. The user completed questionnaire can be found within Attachment 4. The answers provided by Mr. Klein are summarized in the sections below.

4.1 Environmental Liens or Activity and Use Limitations

The client did not report any (1) environmental cleanup liens against the property that are filed or recorded under federal, tribal, state, or local law or (2) Activity and land use limitations (AUL), such as engineering controls, land use restrictions or institutional controls that are in place at the subject property and/or have been filed or recorded in a registry under federal, tribal, state, or local law.

4.2 Specialized Knowledge or Experience

The client reported he has specialized knowledge and experience related the property, as he also works for the current occupant of the property (NRAC).

4.3 Property Valuation

The client reported that the purchase price being paid for the subject property reasonably reflects the fair market value of the property with no reduction in value due to contamination either known or believed to be present on the subject property.

4.4 Known Uses

The client did report that he was aware of the past uses of the subject property and specific chemicals that are present or once were present at the subject property.

4.5 Chemical Releases, Spills or Environmental Cleanups

The client reported that he was aware of spills, other chemical releases, and environmental cleanups that have taken place at the subject property. The client also stated that as the user of the ESA, based on his knowledge and experience related to the property, there are obvious indicators that point to the presence or likely presence of contamination at the property. The NRAC has been the occupant of the subject

property for several years and is aware of chemical releases occurring at the subject property during their occupancy.

5.0 RECORDS REVIEW

5.1 Standard Environmental Record Sources

Standard environmental record sources were reviewed to (1) evaluate the presence of *RECs*, *CRECs* or *HRECs* on the subject property caused by operations, activities, or conditions on sites in the vicinity of the subject property and (2) evaluate potential environmental risks and/or impacts to the subject property caused by off-site sources.

Data from standard federal and state environmental records sources are provided through a search of environmental records meeting or exceeding the specific requirements of ASTM Standard E1527-13. The database search was prepared by Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut. A copy of the Environmental EDR report is presented in Attachment 5.

A review of the federal and state environmental records listed below identified 167 sites within the minimum search distances (MSD) provided. Some of the listed sites appear on multiple databases.

TABLE 1 SUMMARY OF STANDARD ENVIRONMENTAL RECORD SOURCES SEARCH RESULTS

STANDARD ENVIRONMENTAL RECORD SOURCES	SITES IDENTIFIED	MINIMUM SEARCH DISTANCE (MSD)
Federal NPL Site List	None	1.00 mile
Federal Delisted NPL Site List	1 Site	1.00 mile
Federal CERCLIS List (Active)	6 Sites	0.50 mile
Federal CERCLIS NFRAP List	5 Sites	0.50 mile
Federal RCRA CORRACTS Facilities list	None	1.00 mile
Federal RCRA TSD Facilities List	None	0.50 mile
Federal RCRA Generators (Large, Small and Non-Generators) List	54 Sites	Subject Property and Adjoining Properties
Federal Institutional / Engineering Controls Registries	None	Subject Property
Federal ERNS List	2 Sites	Subject Property
State Part 201/Tribal Haz. Waste Sites Lists	17 Sites	1.00 mile

STANDARD ENVIRONMENTAL RECORD SOURCES	SITES IDENTIFIED	MINIMUM SEARCH DISTANCE (MSD)
State/Tribal SWF/Landfill Site Lists	None	0.50 mile
State/Tribal LUST Lists	34 Sites	0.50 mile
State/Tribal UST/AST Lists	60 Sites	0.25 mile
State/Tribal Engineering Controls Registry	None	Subject Property
State/Tribal Institutional Controls Registry	None	Subject Property
State/Tribal Voluntary Cleanup Sites	None	0.50 mile
State/Tribal Brownfield Sites	2 Sites	0.50 mile

EDR searched additional reasonably ascertainable databases with the following results:

TABLE 2 SUMMARY OF OTHER REASONABLY ASCERTAINABLE DATABASES SEARCH RESULTS

ADDITIONAL ENVIRONMENTAL RECORD SOURCES	SITES IDENTIFIED	MINIMUM SEARCH DISTANCE (MSD)
State Other (BEA)	39 Sites	0.50 mile
Local Land Records (LIENS, LIENS2)	None	Subject Property
FINDS	12 Sites	Subject Property
ECHO	11 Sites	Subject Property
WDS	9 Sites	Subject Property
NPDES	None	Subject Property
Unmapped Sites	24 Sites	0.50 mile
FUDS	1 Site	Subject Property
FIFRA/TSCA	1 Site	Subject Property
UXO	1 Site	0.50 mile

5.1.1 Subject Property

The EDR database report identifies eight addresses included in the subject property on the database lists identified below. The addresses listed below, or additional addresses on the subject property, may also appear in the ECHO, FINDS, and/or other databases.

TABLE 3 SUMMARY OF PERTINENT DATABASE RESULTS ON SUBJECT PROPERTY

ADDRESS	DATABASE	DESCRIPTION
1150 Airport Access Rd.	AST	Existing tank system
1275 Airport Access Rd.	AST	Existing tank system
1330 Cherry Capital	Part 213 LUST	National Rental Car – site closed (2006)
727 Fly Don't Dr.	AST	Existing tank system
	Part 201	Interim response in progress; PFAS site
	CDL	Clandestine Drug Lab listing
	UXO	Unexploded Ordnance Site
1800 Stultz Dr.	Part 213 LUST	Cherry Capital Airport – open site
1901 Stultz Dr.	UST	Avis Rental Car – tank removed (1998)
2050 Stultz Dr.	Part 213 LUST	Hertz Rental Car – site closed (2000)
3375 Wright Dr.	AST	Existing tank system

For further detail of the status of the subject property listings, the EDR database report is included as Attachment 5.

5.1.2 Adjoining Properties

The EDR database report identifies numerous adjoining properties in the researched databases. A summary of adjoining parcels that, in our opinion, have a potential to impact environmental media (i.e. soil, water, and/or indoor air) of the subject property is presented in Table 4.

TABLE 4 SUMMARY OF PERTINENT DATABASE RESULTS ON ADJOINING PROPERTIES

ADDRESS	DATABASE	DESCRIPTION
2750 Aero Park Dr.	MI AUL	AlcoTec Wire Co. – land use restrictions
1175 Airport Access Rd.	Federal CERCLIS	USCG Air Station TC
1247 Boon St.	RCRA-VSQG	Grand Traverse Machine
1302 S Garfield Rd.	Part 213 LUST	Serra Nissan – site closed (1995)
941 Hastings St.	Part 213 LUST	TC Garage – open site
2411 West Aero Park Ct.	Federal CERCLIS	Century Sun Metal Treating

For further detail of the status of adjoining property listings, the EDR database report is included as Attachment 5.

5.1.3 Other Sites

Based on information provided within the EDR report, it was determined that the other sites within the minimum search distances from the subject property are not expected to have an adverse environmental impact on the subject property. These findings were based on the direction and distance of the identified site from the subject property; status of the regulatory response activities that have occurred at the properties; known or inferred groundwater flow direction in the subject property area, and barriers, structures or boundary conditions located between the identified site and the subject property.

5.2 Additional Environmental Record Sources

The following additional environmental record sources were consulted to obtain additional information concerning environmental conditions at the subject property:

- Grand Traverse County Environmental Health Department;
- Grand Traverse County Construction Code Office;
- Grand Traverse County Equalization Department;
- Grand Traverse County Geographical Information Systems Department; and
- Traverse City Fire Department.

Gosling Czubak contacted the Traverse City Fire Department on July 22, 2021. According to a search of their database and files for the subject property, they had records of several spills and small fires that have occurred on the subject property in which they responded. They also provided documentation of hazardous storage at the subject property. FOIA files sent by the fire department are available upon request.

Gosling Czubak contacted the Grand Traverse County Health Department on July 21, 2021. According to a search of their database and files for the subject property, no records of hazardous storage or spills, or potential environmental conditions were found in association with the subject property. They do not have a record of when the property was connected to municipal water and municipal sanitary sewer.

The Grand Traverse County Equalization Department, Grand Traverse County Construction Code Office, and Grand Traverse County Geographical Information Systems Department records were reviewed and did not show evidence of information regarding environmental issues or concerns at, or in the vicinity of, the subject property.

5.3 Physical Setting Sources

Regional topography within the area of the subject property is generally flat. The dominant soil type is Rubicon sand with groundwater encountered within the upper 10 feet of land surface.

The subject property lies at a surface elevation of approximately 616-feet above mean sea level. The nearest surface water is Mitchel Creek, which runs south to north through the east clear zone of the subject property and lies at a surface elevation of approximately 580-feet above mean sea level.

5.4 Historical Use Information – Subject Property and Adjoining Properties

The objective of consulting historical sources is to develop a history of the previous uses of the subject property and adjoining parcels in order to evaluate potential *RECs*, *CRECs*, or *HRECs*. Standard Historical Sources reviewed as required under ASTM 1527-13 are those historical sources that are reasonably ascertainable and likely to be useful. These sources are discussed below.

5.4.1 Aerial Photographs

Aerial photographs from 1938, 1953, 1964, 1976, 1981, 1986, 1994, 1999, 2005, 2010, and 2016 were reviewed as part of this ESA. Aerial photographs prior to 1938, if any exist, were not readily available for review and inclusion within this report. The aerial photographs were provided by EDR. A review of the aerial photographs did not identify unusual items or conditions for the subject property or the neighboring parcels. Copies of the aerial photographs are included within Attachment 6, and details are discussed below:

TABLE 5 SUMMARY OF AERIAL IMAGERY REVIEW

DATE	OBSERVATIONS
1938	The subject property appears to be comprised of natural/wooded land and also a clear field resembling an airport runway running north to south on the west side of the subject property. There appears to be two trails cutting through the central portion of the subject property. The surrounding area is comprised of natural/wooded land with rural residential development to the north, east, and south, and residential/commercial development to the northwest.
1953	The subject property has been further developed as an airport property. Multiple runways and access roads are evident in the central portion of the property. Structures are also now present on the north side of the property. The surrounding area has also been further developed for residential and commercial use to the north. The areas east and south of the property are also further developed with residential properties.
1964	There does not appear to be significant changes to the subject property and surrounding area between the dates of 1953 and 1964, with the exception of additional development in the surrounding area.
1976	There does not appear to be significant changes to the subject property and surrounding area between the dates of 1964 and 1976, with the exception of additional development west of the property and there is no longer a runway running NW-SE.

DATE	OBSERVATIONS
1981	There does not appear to be significant changes to the subject property and surrounding area between the dates of 1976 and 1981, with the exception of additional structures on the north side of the property.
1986	There does not appear to be significant changes to the subject property and surrounding area between the dates of 1981 and 1986.
1994	There does not appear to be significant changes to the subject property and surrounding area between the dates of 1986 and 1994., with the exception of additional development in the adjoining business park north of the subject property.
1999	There does not appear to be significant changes to the subject property and surrounding area between the dates of 1994 and 1999.
2005	Between the dates of 1999 and 2005, significant changes occurred to the subject property. The airport terminal building is now evident on the south side of the subject property. In addition, the parking area and access road from South Airport Rd are also apparent. The surrounding area appears to remain the same.
2010	There does not appear to be significant changes to the subject property and surrounding area between the dates of 2005 and 2010. The length of north-south runway appears to have been expanded between 2005-2010.
2016	There does not appear to be significant changes to the subject property and surrounding area between the dates of 2010 and 2016.

5.4.2 Historical Fire Insurance Maps

Because the subject property and vicinity are generally rural, historical fire insurance maps showing the subject property and vicinity were not available.

5.4.3 Property Tax Files

The Grand Traverse County Equalization Departments web page was searched online and the current property tax record cards were obtained for the subject property. The current property tax record cards

indicate that the subject property consists of four parcels that are jointly owned by Grand Traverse and Leelanau Counties. A copy of the property tax records can be found within Attachment 1.

5.4.4 Recorded Land Title Records

A search for title records and environmental liens was not conducted by Gosling Czubak for the subject property. According to the ASTM 1527-13, *“the user should either engage a title company or title professional to undertake a reviews of reasonably ascertainable land title records and lien records for environmental liens or activity and use limitations currently recorded against or relating to the property or negotiate such an engagement if a title company or title professional as an addition to the scope of work performed by the environmental professional.”* The user of this report did not provide documentation in regard to the existence of “environmental liens” associated with the subject property.

5.4.5 USGS Topographic Maps

The 1983 U.S. Geological Survey (USGS) 7.5-minute quadrangle map, “Mayfield, Michigan,” was reviewed to obtain information concerning the land usage history of the site and surrounding area. The subject property is located in a residential and commercially developed area that appears similar to its current configuration as shown in the 1983 USGS 7.5-minute quadrangle map. Development on the surrounding parcels can be seen in the 1983 topographic map. Buildings are depicted on the north side of the subject property.

5.4.6 Local City Directories

Local city directories were not reviewed as part of this ESA.

5.4.7 Building Department Records

Gosling Czubak searched the Grand Traverse County Construction Code Office’s database for issued building permits associated with the subject property. Several permits were listed for various reasons between the dates of 2002 and 2020.

5.4.8 Zoning/Land Use Records

According to the Grand Traverse County Geographical Information Systems Department, the subject property class is 703 – Exempt County, City, Twp., or Village. According to the City of Traverse City Zoning Map (effective: May 24, 2019), the subject property is zoned T – Transportation.

5.4.9 Other Historical Sources

No other historical sources were consulted as part of this ESA.

6.0 SITE RECONNAISSANCE

The objective of the site reconnaissance is to obtain information indicating the likelihood of *RECs*, *CRECs*, or *HRECs* in connection with the subject property.

6.1 Methodology

The methodology used during the site reconnaissance consisted of a site walk-over, physically observing indicators of past and current use(s) of the property and adjoining properties, geologic, hydrogeologic, hydrologic, and topographic conditions, and potential *RECs*, *CRECs*, or *HRECs*, if any, in connection with the subject property. The interior, exterior, and general vicinity of each building and area of the subject property, to which Gosling Czubak was allowed access, was observed to determine the likely presence, or past presence, of potential indicators of hazardous substance or petroleum product use, storage, treatment, or disposal. Potential indicators include:

- Aboveground storage tank (AST)
- Underground storage tank (UST)
- Drum and/or container (> 5 gallons)
- PCB containing equipment
- Pit, pond, or lagoon
- Stained soil or pavement
- Stressed vegetation
- Solid waste
- Wastewater and/or stormwater treatment
- Groundwater monitoring wells
- Pooled liquid
- Strong, pungent, or noxious odor

Mr. Max Korndorfer, Staff Geologist, and Mr. Pete Kallioinen, Project Scientist, with Gosling Czubak conducted the site reconnaissance between the dates of July 15 and August 11, 2021. The weather varied at the time of the site visits, in general the weather was summer conditions. Site visit documentation and photographs taken during the site reconnaissance are presented in Attachment 3.

The subject property was viewed to the extent practical by walking in a grid pattern and using the 2016 aerial photograph to assist in evaluating and identifying physical features of the subject property.

6.2 Subject Property

The current uses of the various addresses for the buildings on the subject property are summarized in Table 6. Based on observations during the site visit, Gosling Czubak did identify evidence of current use of the subject property that would indicate a *REC*.

TABLE 6 SUMMARY OF CURRENT PROPERTY USES OBSERVED DURING SITE VISITS

ADDRESS	CURRENT USE	HAZ. MAT. IDENTIFIED ⁷	REC IDENTIFIED
930 Airport Access Rd.	Private hangar, storage	No	No
950 Airport Access Rd.	Private hangar, storage	Yes	No
1000 Airport Access Rd.	Private hangar, office	No	No
1100 Airport Access Rd.	Private hangar, office	Yes	Yes
1130 Airport Access Rd.	Fueling tanks (AST)	Yes	Yes
1140 Airport Access Rd.	Private hangar, storage	Yes	No
1150 Airport Access Rd.	Commercial hangar, office	Yes	No
1160 Airport Access Rd.	Commercial hangar, office	No	No
1170 Airport Access Rd.	Commercial hangar, office	Yes	No
1180 Airport Access Rd.	Commercial hangar	Yes	No
1190 Airport Access Rd.	Maintenance hangar	Yes	No
South of 1190 Airport Access Rd.	Fueling tanks (AST)	Yes	Yes
1220 Airport Access Rd.	General aviation terminal	No	No

⁷ Includes hazardous materials, petroleum products, and/or other chemicals in containers larger than 5 gallons.

ADDRESS	CURRENT USE	HAZ. MAT. IDENTIFIED ⁷	REC IDENTIFIED
2702 Aeropark Dr.	Private hangar, storage	No	No
1210 Boon St.	Private hangar, storage	No	No
1210A Boon St.	Private hangar, storage	No	No
1230A Boon St.	Private hangar, storage	Yes	No
1230B Boon St.	Private hangar, storage	No	No
1230C Boon St.	Private hangar, storage	Yes	No
1232 Boon St.	Private hangar, storage	No	No
1234 Boon St.	Private hangar, storage	No	No
1240 Boon St.	Private hangar, storage	Yes	Yes
125 E. South Airport Rd.	Retail gas station	Yes	Yes
727 Fly Don't Dr.	Commercial terminal	No	No
1840 Stultz Dr.	Commercial hangar	Yes	Yes
1851 Stultz Dr.	Storage	No	No
1901 Stultz Dr.	Storage	No	Yes
1902 Stultz Dr.	Commercial hangar	Yes	Yes
2050 Stultz Dr.	Storage	No	No
1260 Turbull	Private hangar, storage	No	Yes
3250 Wright Dr.	Car wash and fueling station	Yes	Yes
3375 Wright Dr.	Snow removal equipment building	Yes	Yes
3375A Wright Dr.	Sand storage building and fueling station	Yes	Yes

ADDRESS	CURRENT USE	HAZ. MAT. IDENTIFIED ⁷	REC IDENTIFIED
3425 Wright Dr.	Aircraft rescue and fire fighting and generator UST	Yes	Yes
East Clear Zone	Open, aircraft safety area	No	Yes
South Clear Zone	Open, aircraft safety area	No	No
West Clear Zone	Open, aircraft safety area	No	No

6.3 Past Use(s) of the Subject Property

Based on observations during the site visit, Gosling Czubak did not identify evidence of past use of the subject property that would indicate a *REC*; however, as discussed in Section 8, historic uses may be the cause of *RECs* on the subject property.

6.4 Current Use(s) of Adjoining Properties

The current uses of the adjoining properties were discussed in Section 3.5 of this report. Based on observations of the adjoining properties at the time of the site visit, Gosling Czubak did identify evidence of current use of these properties that would be a *REC* in connection with the subject property.

6.5 Past Use(s) of Adjoining Properties

Based on observations during the site visit, Gosling Czubak did not identify evidence of past use of the adjoining properties that would indicate any sites posing a *REC* for the subject property.

6.6 Current or Past Uses of the Surrounding Area

The current and past uses of the surrounding areas consist of commercial, industrial, and residential development. Based on observations of the surrounding area at the time of the site visit, Gosling Czubak did not identify evidence of current or historical use of the surrounding area that would be a *REC* in connection with the subject property. Information regarding the surrounding area has been presented in Section 3.5 of this report.

7.0 INTERVIEWS

The objective of interviews is to obtain information, regarding the subject property, that may indicate the presence of a *REC* in connection with the subject property.

7.1 Interview with Current Owner

The subject property is currently owned by Grand Traverse and Leelanau Counties. An interview was instead conducted with a representative of the current major occupant.

7.2 Interview with Former Owner

Gosling Czubak did not conduct interviews with a former owner during this assessment.

7.3 Interview with Site Manager

Gosling Czubak did not conduct interviews with a site manager during this assessment.

7.4 Interview with Occupant(s)

Gosling Czubak did conduct an interview with a representative of the major occupant of the subject property, Mr. Kevin Klein, Director of the NRAC. Questions about the subject property were answered to the best of his knowledge. Mr. Klein was aware of hazardous substances stored at the subject property and associated releases of PFAS chemicals from the storage of aqueous film-forming foam (AFFF). Mr. Klein also noted the presence of three above ground storage tanks containing gasoline and diesel fuel for vehicles at the property, and two fuel farms containing storage tanks for jet fuel on the subject property. A copy of the Environmental Assessment Questionnaire completed by Mr. Klein and Gosling Czubak is included within Attachment 7.

7.5 Interview with Local Government Officials

The following local municipal agencies were contacted to obtain additional information regarding the current and historical uses of the subject property and the potential presence of conditions indicating a *REC* in connection with the subject property.

- Grand Traverse County Environmental Health Department; Phone (231) 995-6051, formal request submitted via email; and
- Traverse City Fire Department, Phone (231) 922-4930, formal request submitted via email.

The agencies identified above did not have immediate knowledge or records of *RECs* regarding the subject property.

7.6 Interview with Others

Gosling Czubak did not conduct interviews with adjoining or nearby property occupants during this assessment.

8.0 FINDINGS, OPINIONS, AND CONCLUSIONS

8.1 Recognized Environmental Conditions

This assessment **has revealed evidence** of known *RECs* associated with the subject property. The following constitute a *REC* and may warrant additional investigation:

TABLE 7 DESCRIPTION OF RECS ON SUBJECT PROPERTY

REC-#	LOCATION	DESCRIPTION
1	1100 Airport Access Rd.	The storage of hazardous materials, the identification of this address on multiple environmental databases, and the presence of groundwater monitoring wells.
2	1130 Airport Access Rd.	Three jet fuel AST and the presence of groundwater monitoring wells.
3	1180 Airport Access Rd.	Aircraft maintenance activities and the storage of significant volumes of oils and antifreeze constituent a potential for release.
4	1190 Airport Access Rd.	Three aviation fuel ASTs shows signs of staining on the concrete and the fuel pumps are not in a full containment. The potential from fuel drips and releases from pumping equipment to run-off and percolation to groundwater.
5	1230A Boon St.	Evidence of a historical leak of oil infiltrating into the dry-well with an unknown connection.
6	1240 Boon St.	Oil-drip and leaking from a plane in the hangar may be entering floor drain with an unknown connection. Storage of methyl-ethyl-ketone.
7	125 E. South Airport Rd.	Retail gasoline and diesel station with underground storage tanks has a potential of past and/or future release(s) UST(s)
8	1800 Stultz Dr. 1840 Stultz Dr. 1901 Stultz Dr.	1800 Stultz Dr. is listed as an open leaking underground storage tank site. Groundwater monitoring wells in the vicinity of 1840 and 1901 indicative of ongoing monitoring.

REC-#	LOCATION	DESCRIPTION
9	1902 Stultz Dr.	One aviation fuel AST with potential for spillage onto grassed area. Retired fire fighting truck suggest possible AFFF training in vicinity.
10	1260 Turbull	Concrete holding tank located on the west side of the building. The purpose and contents of the holding tank are unknown. There is a potential for the tank to contain hazardous materials.
11	3250 Wright Dr.	There appears to be a storm drain located directly adjacent to gasoline ASTs and the fuel pumps at the Car Wash Facility. There is potential for petroleum-based products from the ASTs and fuel pumps to overflow into the stormwater drain with an unknown connection.
12	3375 Wright Dr.	Evidence of AFFF release observed. Large polyethylene storage tanks along west of building for deicer have potential for historic release
13	3375A Wright Dr.	There appears to be a dry-well/draining system near the containment around the gasoline ASTs and fueling station. There is potential for release from the ASTs and fuel station to overflow and infiltrate into ground surface through the draining system.
14	3425 Wright Dr.	Storage and testing of PFAS containing AFFF. Diesel fuel UST for backup generator. Groundwater monitoring wells along perimeter of stormwater pond to the north of the building indicative of ongoing monitoring.
15	East Clear Zone	Stormwater retention pond identified as FAU8 in the northeast corner of the E-W runway collects water from the city industrial park. The potential for the stormwater to contain hazardous chemicals from the airport or industrial park could result in infiltration to groundwater.

REC-#	LOCATION	DESCRIPTION
16	North Clear Zone	Stormwater retention pond near taxiway C1 reportedly used for AFFF equipment testing. Groundwater monitoring wells observed in vicinity of 930 Airport Access Rd.
17	Aviation Ramps and Runways	The historic use of de-icing and antifreeze products on runways and aircraft. The products used for de-icing procedures have the potential to contain hazardous chemicals and have the potential to be in direct connection with groundwater and stormwater ponds on the property.
18	Unknown	Based upon the known historical use of the subject and adjacent properties by the U.S. military and the identification of the subject property in the unexploded ordnance database, there is a potential for hazardous materials to exist at the property from past military operations.

8.2 Controlled Recognized Environmental Conditions

This assessment has revealed no evidence of known *CRECs* associated with the subject property.

8.3 Historical Recognized Environmental Conditions

This assessment has revealed evidence of known *HRECs* associated with the subject property.

TABLE 8 SUMMARY OF HRECS ON SUBJECT PROPERTY

HREC-#	LOCATION	DESCRIPTION
1	1330 Cherry Capital	National Rental Car – LUST site closed in 2006
2	1901 Stultz Dr.	Avis Rental Car – tank removed in 1998
3	2050 Stultz Dr.	Hertz Rental Car – LUST site closed in 2000

HREC-#	LOCATION	DESCRIPTION
4	1302 S Garfield Rd.	Serra Nissan – LUST site closed in 1995

9.0 DEVIATIONS

Gosling Czubak did not deviate from ASTM Standard E1527 when completing this assessment.

9.1 Data Gaps

Aerial imagery and other historical data sources were not available between 1938 and 1953. During a portion of this timeframe, the subject property was reportedly operated by the US Navy – Department of Defense. No other significant data gaps associated with information related to the development of the subject property were noted. Information related to the use of the subject property prior to 1938 was not reviewed as part of this ESA.

10.0 REFERENCES

The following published sources were used in preparing this Phase I ESA report:

- Property Legal Description/Current Property Tax Record Card – published by the Grand Traverse County Equalization Department;
- USGS Topographic Map, 7.5-minute, Mayfield, Michigan Quadrangle – CD and software published by Maptech, Inc.;
- Environmental Database Report, Government Records Search, Instant Online Report – published by EDR;
- Historical Aerial Photographs – provided by EDR

11.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

We declare that, to the best of our professional knowledge and belief, we meet the definition of an environmental professional as defined in §312.10 of 40 CFR Part 312. We have the specific qualifications based on education, training and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in the conformance with the standards and practices set forth in the 40 CFR Part 312.

Prepared by:

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12.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

Mr. Max R. Korndorfer received his Bachelor of Science Degree in Geology, with an Environmental emphasis, in 2017 from Grand Valley State University in Allendale, MI. Mr. Korndorfer has performed numerous Phase I and II Environmental Site Assessments as well as other environmental due diligence tasks such as Environmental Transaction Screens and Records Search and Risk Assessments. He has a working knowledge of current environmental regulations as well as the necessary skills to complete field reconnaissance, testing, data recovery, monitoring, site recording, and mapping. Mr. Korndorfer has completed HAZWOPER (40-Hour) training.

Mr. Adam Segerlind is a professional engineer with over 20 years of experience in environmental consulting. He is a registered professional engineer in the State of Michigan. Mr. Segerlind has performed Environmental Site Assessments for municipal, commercial, industrial, and private clients throughout Michigan. In addition to performing environmental site assessments, Mr. Segerlind prepares hydrogeological work plans, performs hydrogeological and remedial investigations, evaluates remedial alternatives, and prepares and implements corrective action plans for sites of environmental contamination.

Attachment 1

Property Tax Record Card

Parcel 51-113-002-02

Grand Traverse County Property Information 2021 - June 1st PRE Update

Parcel: 51-113-002-02

Jurisdiction: City of Traverse City

Owner Name: GRAND TRAVERSE CO & LEELANAU CO

Property Address: 727 FLY DON'T DR
TRAVERSE CITY, MI 49686

Mailing Address: 727 FLY DON'T DR
TRAVERSE CITY, MI 49686

2021 - June 1st PRE Update Property Information

Current Taxable Value: \$0

Last Year's Taxable Value: \$0

School District: 28010

Current Assessment: \$0

Last Year's Assessment: \$0

Current S.E.V.: \$0

Last Year's S.E.V.: \$0

Current P.R.E.*: 0%

* This percentage may pertain to exemptions other than the Principal Residence Exemption.

Current Property Class: 703 - Exempt County, City, Twp. or Village

Tax Information

Taxable Year	Summer Tax Amount	Winter Tax Amount
2020	\$0.00	\$0.00
2019	\$0.00	\$0.00
2018	\$0.00	\$0.00

Property Sale Information

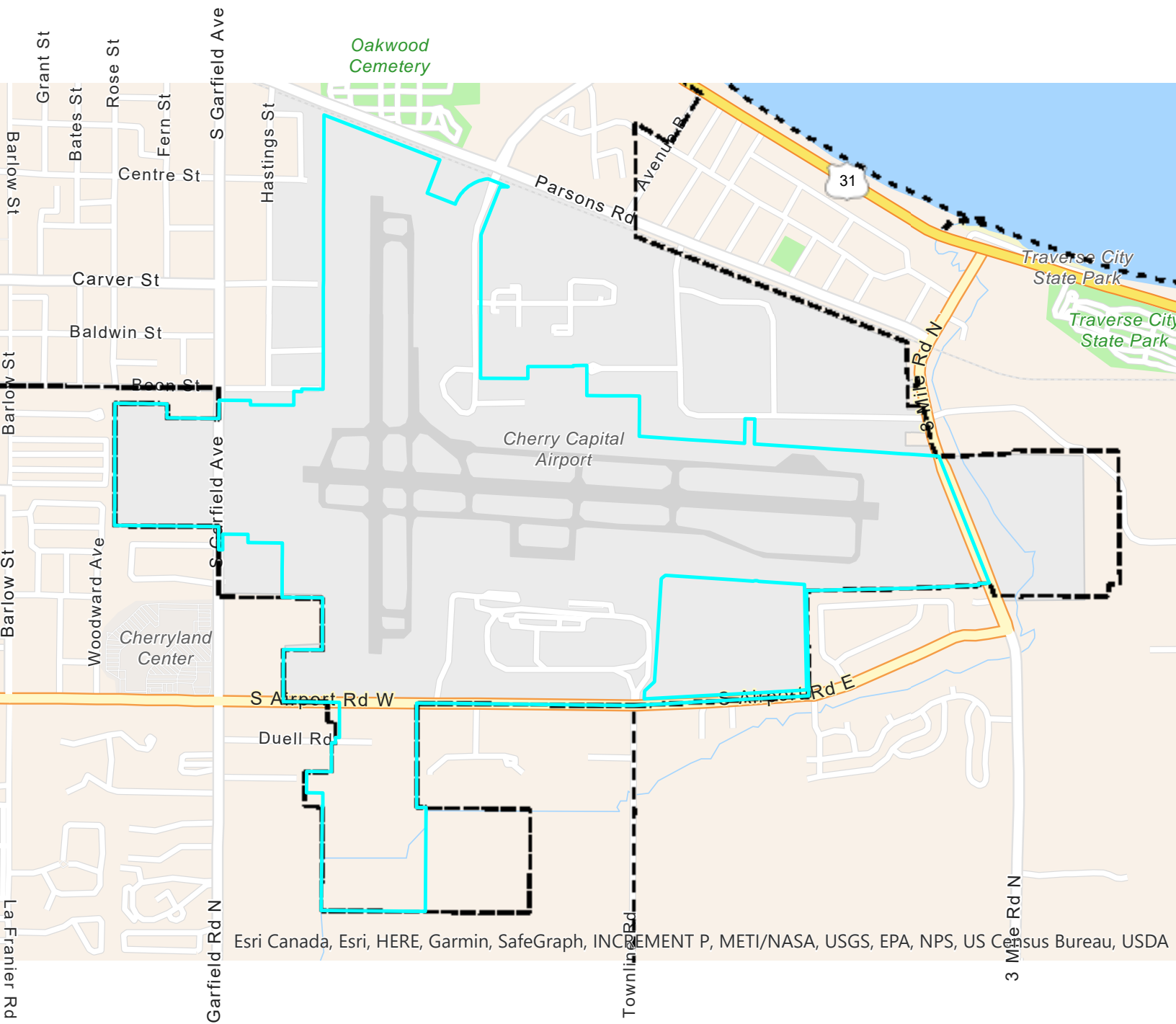
Sale information is not available for this property

Tax Description

REMAINDER DESCRIPTION : PO SECTIONS 12,13,14, AND 24, T27N, R11W, AND PO SECTIONS 17 AND 18, T27N, R1 0W, CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN. DESCRIBED AS FOLLOWS: BEGINNING AT A POINT WHICH IS S 89°48'15" E, 677.73 FEET AND N

0°10'58" E, 154.42 FEET FROM THE 1/4 CORNER COMMON TO SECTIONS 12 AND 13, T27N, R11W; THENCE S 89°48'15" E, 599.19 FEET; THENCE N 0°10'11" E, 149.93 FEET; THENCE S 89°49'15" E, 577.99 FEET; THENCE N 0°20'35" W 13.60 FEET TO A POINT ON BOUNDARY OF PLAT OF TRAVERSE CITY AIRPORT INDUSTRIAL PARK; THENCE ALONG SAID PLAT BOUNDARY FOR NEXT NINE COURSES, N 89°03'30" E, 173.29 FEET; THENCE S 0°13'39" W, 383.78 FEET; THENCE S 89°44'41" E, 669.76 FEET; THENCE S 0°15'25" W 512.06 FEET; THENCE S 86°18'05" E, 1342.36 FEET; THENCE N 0°48'25" E, 311.46 FEET; THENCE S 86°18'05" E, 124.87 FEET; THENCE S 0°52'34" W, 317.90 FEET; THENCE S 86°17'35" E, 2346.85 FEET TO THE CENTERLINE OF THREE MILE ROAD; THENCE S 21°49'33" E, 1735.93 FEET FOLLOWING THE CENTERLINE OF THREE MILE ROAD; THENCE S 87°22'11" W, 138.16 FEET; THENCE SOUTH, 20.02 FEET TO NORTH LINE OF PLAT OF SWIGARTS SUNSET TERRACE AND EAST & WEST 1/4 LINE OF SECTION 18; THENCE S 87°22'11" W, 858.80 FEET ALONG SAID 1/4 LINE; THENCE CONTINUING ALONG THE EAST & WEST 1/4 LINE S 88°45'39" W, 1328.29 FEET TO CENTER 1/4 CORNER OF SECTION 18 AND NW CORNER OF WIGARTS SUNSET TERRACE; THENCE S 1°10'32" E, 1334.55 FEET ALONG THE NORTH & SOUTH 1/4 LINE AND THE WEST BOUNDARY OF SWIGARTS SUNSET TERRACE TO THE SOUTH 1/8 LINE OF SECTION 18 AND THE CENTERLINE OF SOUTH AIRPORT ROAD; THENCE S 86°51'43" W, 2226.95 FEET ALONG SAID CENTERLINE TO EAST LINE OF SECTION 13, T27N, R11W; THENCE CONTINUING ALONG SAID CENTERLINE AND S 1/8 LINE OF SECTION 13 N 89°16'05" W, 2637.79 FEET TO NORTH & SOUTH 1/4 LINE OF SECTION 13; THENCE CONTINUING ALONG SAID CENTERLINE AND S 1/8 LINE N 89°31'10" W, 120.00 FEET; THENCE S 0°04'37" W, 1326.40 FEET TO SOUTH LINE OF SECTION 13; THENCE S 89°24'06" E, 120.00 FEET ALONG SAID SOUTH SECTION LINE TO 1/4 CORNER COMMON TO SECTIONS 13 AND 24, T27N, R11W; THENCE S 0°19'08" W, 1316.69 FEET ALONG NORTH & SOUTH 1/4 LINE OF SECTION 24; THENCE N 89°30'30" W, 1323.78 FEET ALONG NORTH 1/8 LINE OF SECTION 24; THENCE N 0°26'36" E, 1319.14 FEET ALONG WEST 1/8 LINE OF SECTION 24 TO SOUTH LINE OF SECTION 13; THENCE S 89°24'06" E, 8.96 FEET ALONG SOUTH LINE OF SECTION 13; THENCE N 0°07'37" W, 170.01 FEET; THENCE N 89°24'06" W, 208.01 FEET; THENCE N 0°07'37" E 271.24 FEET; THENCE S 89°24'06" E, 314.18 FEET; THENCE N 0°07'37" E, 354.90 FEET TO SOUTH RIGHT-OF-WAY LINE OF DUELL ROAD; THENCE S 89°31'10" E, 51.97 FEET ALONG SAID RIGHT-OF-WAY; THENCE N 0°07'37" E, 80.51 FEET; THENCE S 89°31'10" E, 50.00 FEET; THENCE N 0°07'37" E, 447.50 FEET TO CENTERLINE OF SOUTH AIRPORT ROAD AND SOUTH 1/8 LINE OF SECTION 13; THENCE N 89°31'10" W, 712.00 FEET ALONG SAID CENTERLINE; THENCE N 0°04'58" E, 659.17 FEET; THENCE S 89°29'09" E, 494.86 FEET; THENCE N 0°04'11" E, 659.26 FEET; THENCE N 89°22'07" W, 512.98 FEET; THENCE N 0°07'59" E, 600.75 FEET; THENCE S 89°55'27" W, 807.19 FEET TO WEST LINE OF SECTION 13 AND THE CENTERLINE OF GARFIELD AVENUE; THENCE N 0°07'35" E, 296.58 FEET ALONG CENTERLINE OF GARFIELD AVENUE TO NORTH LINE OF LOT 7, PLAT OF WILBUR WOODS, EXTENDED EAST; THENCE N 89°20'39" W, 1323.14 FEET ALONG NORTH LINE OF SAID LOT 7 AND NORTH LINE OF PLAT OF FORESTLANE SUBDIVISION; THENCE N 0°09'57" E, 1546.62 FEET ALONG WEST LINE OF GLADEWOOD SUBDIVISION, TOWN AND COUNTRY MOBILE HOME VILLAGE, AND PLAT OF ROBINWOOD COURT; THENCE S 89°18'17" E, 661.41 FEET ALONG SOUTH LINE OF ARBUTUS SUBDIVISION NO.2; THENCE S 0°08'46" W, 177.00 FEET; THENCE S 89°18'26" E, 660.74 FEET TO WEST LINE OF SECTION 13 AND CENTERLINE OF GARFIELD AVENUE; THENCE N 0°07'35" E, 232.05 FEET ALONG SAID CENTERLINE; THENCE S 89°25'22" E, 750.02 FEET; THENCE N 0°07'35" E, 20.00 FEET; THENCE S 89°25'22" E, 200.00 FEET; THENCE N 0°07'35" E, 100.00 FEET; THENCE S 89°25'22" E, 100.00 FEET; THENCE N 00°07'35" E, 33.00 FEET TO THE NORTH LINE OF SECTION 13 AND CENTERLINE OF BOON STREET; THENCE S 89°25'15" E, 372.09 FEET TO SE CORNER OF THE PLAT OF OAKWOOD ADDITION AND W 1/8 LINE OF SECTION 12; THENCE N 0°12'08" E, 3472.18 FEET ALONG EAST LINE OF PLAT OF OAKWOOD ADDITION AND SAID W 1/8 LINE TO SOUTHERLY RIGHT-OF-WAY LINE OF C & O RAILROAD; THENCE S 68°45'22" E, 1580.54 FEET ALONG SAID RAILROAD RIGHT-OF-WAY; THENCE S 21°14'04" W, 449.95 FEET; THENCE S 68°43'27" E, 382.84 FEET; THENCE ALONG A NON-TANGENT 497.90 FOOT RADIUS CURVE TO RIGHT (CENTRAL ANGLE = 63°49'12", CHORD DIST.= 526.37 FEET, CHORD BEARING = N 52°26'45" E) FOR 554.60 FEET RETURNING TO SAID RAILROAD RIGHT-OF-WAY; THENCE S 68°48'15" E, 275.14 FEET ALONG SAID RAILROAD RIGHT-OF-WAY; THENCE N 89°54'22" W, 103.63 FEET; THENCE S 21°46'28" W, 655.54 FEET; THENCE S

0°10'29" W, 1814.43 FEET TO THE POINT OF BEGINNING. EXCECPT: PART OF SECTION 18, T27N, R10W, CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT WEST 1/4 CORNER OF SAID SECTION; THENCE N87°18'11"E 333.91 FEET ALONG EAST AND WEST 1/4 LINE OF SAID SECTION; THENCE S04°32'49"W 571.95 FEET TO THE POINT OF BEGINNING OF DESCRIPTION; THENCE N87°42'43"E 1191.12 FEET; THENCE S02°17'17"E 677.26 FEET TO PROPOSED NORTHERLY RIGHT OF WAY OF SOUTH AIRPORT ROAD; THENCE S87°42'43"W 1389.84 FEET ALONG A LINE THAT IS 75 FEET NORTH OF AND PARALLEL WITH SOUTH LINE OF NORTH 1/2 OF SUUTHWEST 1/4 OF SAID SECTION; THENCE N04°32'49"E 101.26 FEET; THENCE N48°02'00"E 69.59 FEET; THENCE N04°32'49"E 471.79 FEET TO POB. EXECPT: PART OF THE N 1/2 OF THE SW 1/4 OF SEC 18, T27N, R10W, CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN, MORE FULLY DESCRIBED AS: COM W 1/4 COR OF SAID SEC 18; TH N 87°18'11" E, 333.91 FT ALONG THE E-W 1/4 LINE OF SAID SEC 18; TH S 04°32'49" W, 571.95 FT TO POB; TH N 87° 42' 43" E, 1191.12 FT; TH S 2° 17' 17" E, 677.26 FT; TH N 87° 42' 53" E, 574.81 FT; TH N 86° 6' 29" E, 102.62 FT; TH N 0° 18' 36" W, 1334.58 FT; TH N 85° 26' 27" W, 1772.02 FT; TH S 51° 40' 33" W, 69.03 FT; TH S 4° 32' 35" W, 835.95 FT TO POB; CONTAINING 1,005.92 ACRES - 2018 2019 SPLIT OFF DEVELOPMENT AREA - NORTH & EAST OF COSTCO SUBJECT TO THE RIGHT-OF-WAYS OF THREE MILE ROAD, SOUTH AIRPORT ROAD, SOUTH GARFIELD AVENUE, BOON STREET, AND DUELL ROAD. SPLIT ON 12/27/2016 INTO 28-51-113-002-02, 28-51-898-960-00;



Esri Canada, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Parcel 51-113-002-03

Grand Traverse County Property Information 2021 - June 1st PRE Update

Parcel: 51-113-002-03

Jurisdiction: City of Traverse City

Owner Name: GRAND TRAVERSE CO & LEELANAU CO

Property Address: 125 E SOUTH AIRPORT RD
TRAVERSE CITY, MI 49686

Mailing Address: 727 FLY DON'T DR
TRAVERSE CITY, MI 49686

2021 - June 1st PRE Update Property Information

Current Taxable Value: \$875,100
Last Year's Taxable Value: \$873,800
School District: 28010
Current Assessment: \$875,100
Last Year's Assessment: \$873,800
Current S.E.V.: \$875,100
Last Year's S.E.V.: \$873,800
Current P.R.E.*: 0%

* This percentage may pertain to exemptions other than the Principal Residence Exemption.

Current Property Class: 202 - Commercial - Vacant

Tax Information

Taxable Year	Summer Tax Amount	Winter Tax Amount
2020	\$44,654.25	\$3,745.35
2019	\$44,911.87	\$3,945.71
2018	\$43,896.89	\$3,910.56

Delinquent Tax Information

For current delinquent tax information or to pay your delinquent taxes online, [CLICK HERE](#) and you will be redirected to a third party site.

Property Sale Information

Sale information is not available for this property

Tax Description

PART NORTH HALF OF SOUTHWEST QUARTER OF SECTION 18, TOWN 27 NORTH, RANGE 10 WEST, CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN, MORE FULLY DESCRIBED AS: COMMENCING AT THE WEST QUARTER CORNER OF SAID SECTION 18; THENCE NORTH 87°18'11" EAST, 333.91 FEET ALONG THE EAST-WEST QUARTER LINE OF SAID SECTION 18; THENCE SOUTH 04°32'49" WEST, 571 .95 FEET; TO THE POINT OF BEGINNING; THENCE NORTH 87°42'43" EAST, 1,191 .12 FEET; THENCE SOUTH 02°17'17" EAST, 677.26 FEET; THENCE SOUTH 87°42'43" WEST, 1,389.84 FEET; THENCE NORTH 04°32'49" EAST, 101 .26 FEET; THENCE NORTH 48°02'00" EAST, 169.59 FEET; THENCE NORTH 04°32'49" EAST, 471 .79 FEET; TO THE POINT OF BEGINNING. SAID PARCEL CONTAINS 19.57 ACRES MORE OR LESS. SPLIT/COMBINED ON 12/27/2016 FROM 28-51-113-002-01;



Parcel 51-113-002-04

Grand Traverse County Property Information 2021 - June 1st PRE Update

Parcel: 51-113-002-04

Jurisdiction: City of Traverse City

Owner Name: GRAND TRAVERSE CO & LEELANAU CO

Property Address: E SOUTH AIRPORT RD
TRAVERSE CITY, MI 49686

Mailing Address: 727 FLY DON'T DR
TRAVERSE CITY, MI 49686

2021 - June 1st PRE Update Property Information

Current Taxable Value: \$0
Last Year's Taxable Value: \$0
School District: 28010
Current Assessment: \$0
Last Year's Assessment: \$0
Current S.E.V.: \$0
Last Year's S.E.V.: \$0
Current P.R.E.*: 0%

* This percentage may pertain to exemptions other than the Principal Residence Exemption.

Current Property Class: 202 - Commercial - Vacant

Tax Information

Taxable Year	Summer Tax Amount	Winter Tax Amount
2020	\$0.00	\$0.00
2019	\$0.00	\$0.00

Delinquent Tax Information

For current delinquent tax information or to pay your delinquent taxes online, [CLICK HERE](#) and you will be redirected to a third party site.

Property Sale Information

Sale information is not available for this property

Tax Description

PART OF THE N 1/2 OF THE SW 1/4 OF SEC 18, T27N, R10W, CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN, MORE FULLY DESCRIBED AS: COM W 1/4 COR OF SAID SEC 18; TH N 87°18'11" E, 333.91 FT ALONG THE E-W 1/4 LINE OF SAID SEC 18; TH S 04°32'49" W, 571 .95 FT TO POB; TH N 87° 42' 43" E, 1191.12 FT; TH S 2° 17' 17" E, 677.26 FT; TH N 87° 42' 53" E, 574.81 FT; TH N 86° 6' 29" E, 102.62 FT; TH N 0° 18' 36" W, 1334.58 FT; TH N 85° 26' 27" W, 1772.02 FT; TH S 51° 40' 33" W, 69.03 FT; TH S 4° 32' 35" W, 835.95 FT TO POB;



GTC GIS, Esri Community Maps Contributors, Esri Canada, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/ NASA, USGS, EPA, NPS, US Census Bureau, USDA

Woodcreek Blvd

Hawthorne Ln

Parcel 51-017-001-00

Grand Traverse County Property Information 2021 - June 1st PRE Update

Parcel: 51-017-001-00

Jurisdiction: City of Traverse City

Owner Name: GRAND TRAVERSE CO & LEELANAU CO

Property Address: THREE MILE RD
TRAVERSE CITY, MI 49686

Mailing Address: TRAVERSE CITY, MI 49686

2021 - June 1st PRE Update Property Information

Current Taxable Value: \$0

Last Year's Taxable Value: \$0

School District: 28010

Current Assessment: \$0

Last Year's Assessment: \$0

Current S.E.V.: \$0

Last Year's S.E.V.: \$0

Current P.R.E.*: 0%

* This percentage may pertain to exemptions other than the Principal Residence Exemption.

Current Property Class: 703 - Exempt County, City, Twp. or Village

Tax Information

Taxable Year	Summer Tax Amount	Winter Tax Amount
2020	\$0.00	\$0.00
2019	\$0.00	\$0.00

Property Sale Information

Sale information is not available for this property

Tax Description

SW 1/4 OF NW 1/4 & S 360 FT OF NW 1/4 OF NW 1/4 ALSO N 151 FT OF NW 1/4 OF SW 1/4 SEC 17
T27N R10W EXC E 151 FT THEREOF N 151 FT OF NE 1/4 OF SE 1/4 LYING E OF C/L OF 3 MILE ROAD
SEC 18 T27N R10W



GTC GIS, Esri Community Maps Contributors, Esri Canada, Esri, HERE, Garmin, SafeGraph, INCREMENT P, MIETI/
NASA, USGS, EPA, NPS, US Census Bureau, USDA

Attachment 2

Site Location Map

(TRAVERSE CITY SW)

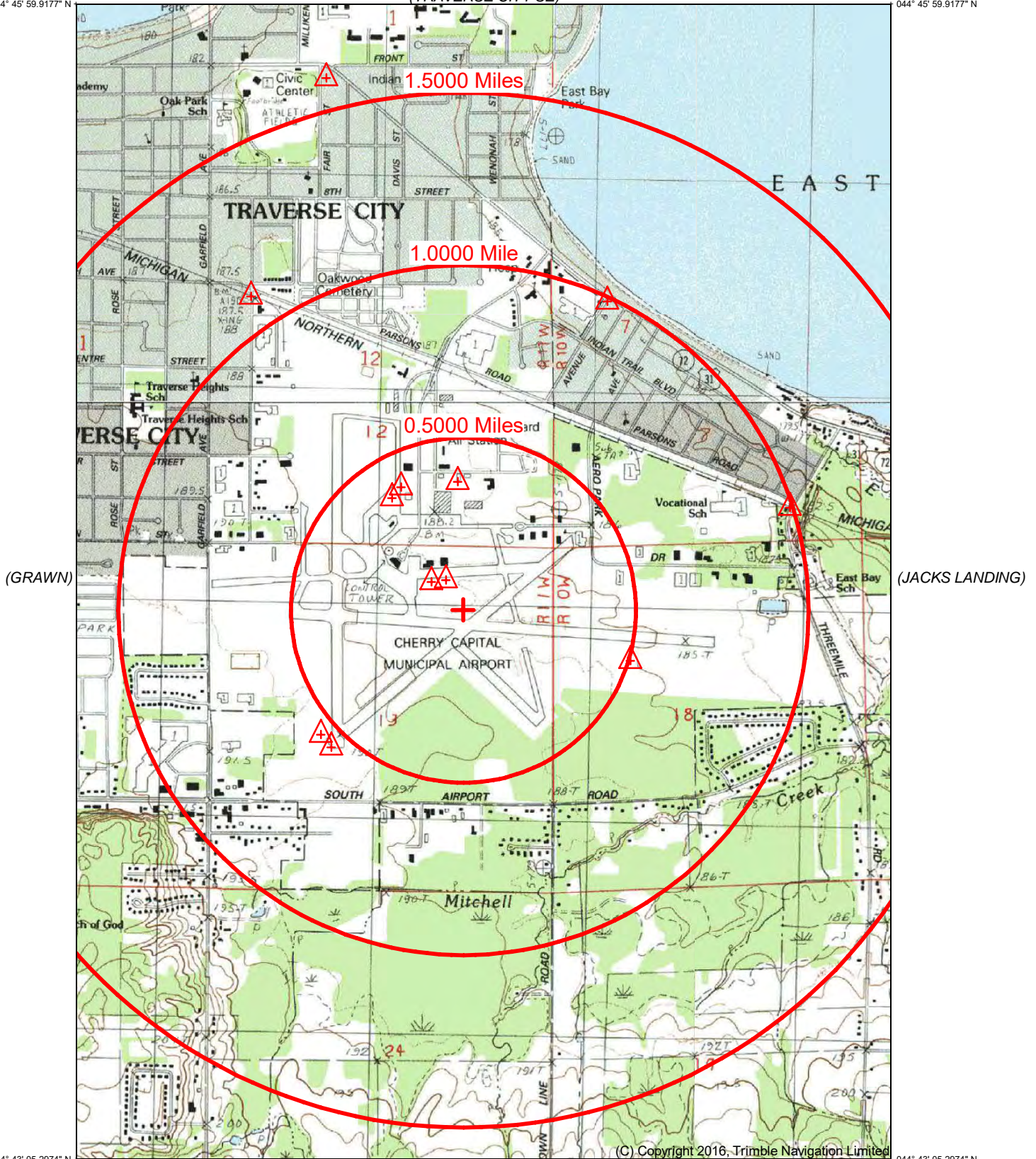


MAYFIELD QUADRANGLE
MICHIGAN
TOPOGRAPHIC SERIES 'WILLIAMSBURG)

085° 36' 10.8392" W
044° 45' 59.9177" N

(TRAVERSE CITY SE)

085° 33' 17.3678" W
044° 45' 59.9177" N



044° 43' 05.2974" N
085° 36' 10.8392" W

(C) Copyright 2016, Trimble Navigation Limited
Printed: Tue Aug 10, 2021
085° 33' 17.3678" W
044° 43' 05.2974" N

(BUCKLEY)

(KINGSLEY)
SCALE 1:25000

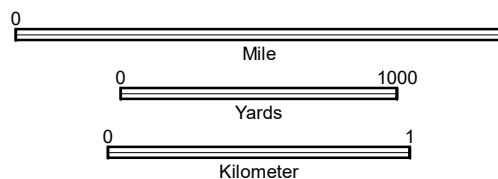
(WALTON)

Produced by Trimble Terrain Navigator Pro
Topography based on USGS 1:25,000
Maps

North American 1983 Datum (NAD83)

To place on the predicted North American
1927 move the projection lines 0M N and
6M W

Declination

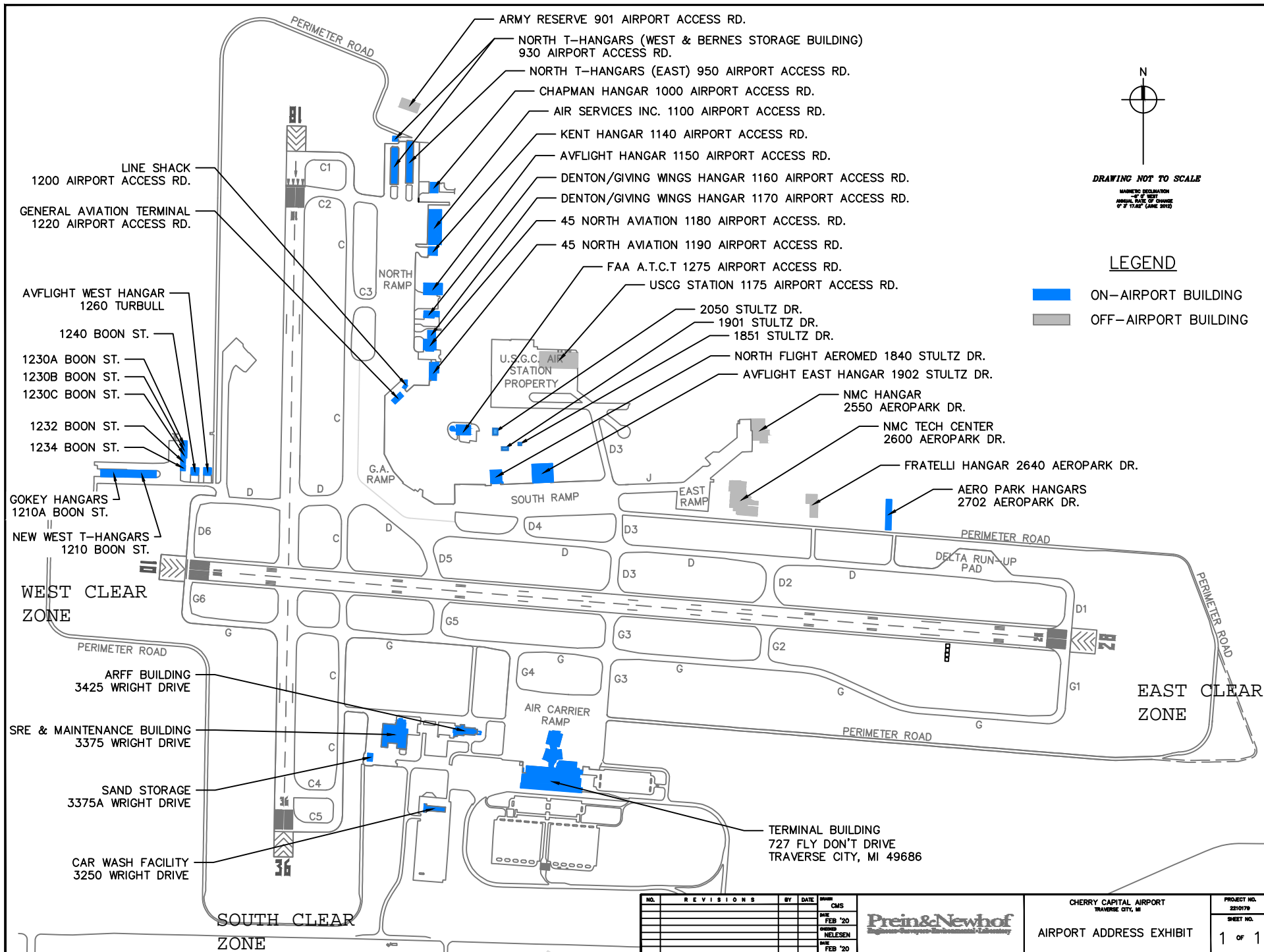


CONTOUR INTERVAL 10 FT

44085-F5-TM-025
MAYFIELD, MI
JAN 1, 1983

Attachment 3

Site Reconnaissance Notes & Photographs



DRAWING NOT TO SCALE
 MAGNETIC DECLINATION
 4° 0' WEST
 ANNUAL VARIATION 1" CHANGE
 0° 3' 17.6" (JUNE 2012)

LEGEND

ON-AIRPORT BUILDING

OFF-AIRPORT BUILDING

NO.	REVISIONS	BY	DATE	CHKD
				CMS
				FEB '20
				NELESEN
				FEB '20



CHERRY CAPITAL AIRPORT
TRAVERSE CITY, MI

AIRPORT ADDRESS EXHIBIT

PROJECT NO. 2310179
SHEET NO. 1 OF 1

ORIGINAL DATE: 10/01/2021
 REVISION DATE:

FAA APPROVAL:



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 08/11/2021

Project: Cherry Capital Airport Phase I ESA

Location: Costco Gas Station

Project Number: 2021630002.01

Address: 125 E South Airport Rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Gas station</i>
Past Use of the Property	<i>Gas station</i>
Current Use of the Adjoining Property	<i>Costco grocery, airport, residential</i>
Past Use of the Adjoining Property	<i>Costco grocery, airport, residential</i>
Current and Past Uses of Surrounding Area	<i>Costco grocery, airport, residential</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Brick structure over fuel pumps, concrete paving</i>

General Site Photographs

Description	
Viewing Location/Direction	

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	The property is a gas station
Storage Tanks (AST and/or UST)	Yes	Underground storage tanks for diesel fuel and gasoline
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	Yes	Deminus staining near fuel pumps
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other exterior conditions observed	No	

Exterior Observation Photographs



Description	<i>Overall from northeast</i>
Viewing Location/Direction	<i>Facing southwest</i>



Description	<i>Manhole for waterline/storage tanks in northeast corner</i>
Viewing Location/Direction	<i>Facing south</i>



Description	<i>Underground storage tank for gasoline pumps</i>
Viewing Location/Direction	<i>Facing south</i>



Description	<i>Underground storage tanks on west side of pumps</i>
Viewing Location/Direction	<i>Facing east</i>



Description	<i>Fuel pumps from northwest</i>
Viewing Location/Direction	<i>Facing southeast</i>



Description	<i>Underground storage tanks on west side</i>
Viewing Location/Direction	<i>Facing west</i>



Description	<i>Emergency shut off switch on south side</i>
Viewing Location/Direction	<i>Facing south</i>



Description	<i>Diesel pumps</i>
Viewing Location/Direction	<i>Facing north</i>



Description	<i>Operator booth and fuel pumps in center</i>
Viewing Location/Direction	<i>Facing south</i>



Description	<i>Operator booth on north side</i>
Viewing Location/Direction	<i>Facing north</i>

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	The property is a gas station
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	



Interior Observation Photographs

NA	
Description	
Viewing Location/Direction	

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/21/2021

Project: Cherry Capital Airport Phase I ESA

Location: North T Hangars (west buildings)

Project Number: 2021630002.01

Address: 930 Airport Access Rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangars and storage building</i>
Past Use of the Property	<i>Hangars and storage building</i>
Current Use of the Adjoining Property	<i>Hangars and Army Reserve</i>
Past Use of the Adjoining Property	<i>Hangars and Army Reserve</i>
Current and Past Uses of Surrounding Area	<i>Hangars, Army Reserve, commercial</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface, stormwater pond (west of storage building)</i>
General Description of Buildings and Improvements	<i>Metal pole buildings, concrete floors</i>

General Site Photographs

	
Description	<i>East side of storage building</i>
Viewing Location/Direction	<i>West</i>



Description	<i>South side of storage building</i>
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Viewing Location/Direction	<i>North</i>
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Description	<i>West side of storage building</i>
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Viewing Location/Direction	<i>Northeast</i>
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Description	<i>West side of hangar building</i>
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Viewing Location/Direction	<i>Southeast</i>
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Description	<i>North side of hangar building</i>
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Viewing Location/Direction	<i>South</i>
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Description	<i>East side of hangar building</i>
Viewing Location/Direction	<i>Southwest</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type(s))	Yes	Groundwater monitoring wells near stormwater pond
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	



Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

Interior Observation Photographs



Description	<i>North side of storage building (north building)</i>
Viewing Location/Direction	<i>West</i>



Description	<i>South side of storage building</i>
Viewing Location/Direction	<i>West</i>



Description	Unit 30
Viewing Location/Direction	Southwest



Description	Unit 28
Viewing Location/Direction	Southwest



Description	Unit 26
Viewing Location/Direction	Southwest



Description	Unit 24
Viewing Location/Direction	Southwest



Description	Unit 22
Viewing Location/Direction	Southwest



Description	Unit 20
Viewing Location/Direction	Southwest



Description	<i>Unit 18</i>
Viewing Location/Direction	<i>Southwest</i>



Description	<i>Unit 17</i>
Viewing Location/Direction	<i>Northeast</i>



Description	Unit 17 storage area
Viewing Location/Direction	South



Description	Unit 19
Viewing Location/Direction	Northeast



Description	Unit 21
Viewing Location/Direction	Northeast



Description	Unit 23
Viewing Location/Direction	Northeast



Description	Unit 25
Viewing Location/Direction	Northeast



Description	Unit 27
Viewing Location/Direction	Northeast



Description	<i>North side storage</i>
Viewing Location/Direction	<i>Northeast</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/21/2021

Project: Cherry Capital Airport Phase I ESA

Location: North T Hangars (east)

Project Number: 2021630002.01

Address: 950 Airport Access Rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangars</i>
Past Use of the Property	<i>Hangars</i>
Current Use of the Adjoining Property	<i>Army reserve and hangars/storage</i>
Past Use of the Adjoining Property	<i>Army reserve and hangars/storage</i>
Current and Past Uses of Surrounding Area	<i>Hangars and storage & army reserve</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floors</i>

General Site Photographs

	
Description	<i>Overall building from northeast</i>
Viewing Location/Direction	<i>Southwest</i>



Description	<i>North side of building</i>
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Viewing Location/Direction	<i>South</i>
----------------------------	--------------



Description	<i>West side of building</i>
-------------	------------------------------

Viewing Location/Direction	<i>Northeast</i>
----------------------------	------------------



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	Yes	55 gallon drum in Unit 10 with unknown fluid - observed in good condition with no staining or leaks
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other interior conditions observed	No	

Interior Observation Photographs



Description	<i>Unit 16</i>
Viewing Location/Direction	<i>Northwest</i>



Description	<i>Unit 14</i>
Viewing Location/Direction	<i>Northwest</i>



Description	<i>Unit 12</i>
Viewing Location/Direction	<i>Northwest</i>



Description	<i>Unit 10</i>
Viewing Location/Direction	<i>Northwest</i>



Description	<i>Drum in Unit 10 and storage</i>
Viewing Location/Direction	<i>Northwest</i>



Description	<i>Unit 8</i>
Viewing Location/Direction	<i>Northwest</i>



Description	<i>Unit 6</i>
Viewing Location/Direction	<i>Northwest</i>



Description	Unit 4
Viewing Location/Direction	Northwest



Description	Unit 2
Viewing Location/Direction	Northwest



Description	Unit 3
Viewing Location/Direction	Southeast



Description	Unit 5
Viewing Location/Direction	Southeast



Description	<i>Unit 7</i>
Viewing Location/Direction	<i>Southeast</i>



Description	<i>Unit 9</i>
Viewing Location/Direction	<i>Southeast</i>



Description	Unit 11
Viewing Location/Direction	Southeast



Description	Unit 13
Viewing Location/Direction	Southeast



Description	<i>Unit 15</i>
Viewing Location/Direction	<i>Southeast</i>



Description	<i>Unit 15 - storage area</i>
Viewing Location/Direction	<i>North</i>



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*Engineers • Surveyors
Landscape Architecture
Environmental Services*

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/21/2021

Project: Cherry Capital Airport Phase I ESA

Location: Chapman Hangar

Project Number: 2021630002.01

Address: 1000 Airport Access Rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangar</i>
Past Use of the Property	<i>Hangar</i>
Current Use of the Adjoining Property	<i>Hangars and army reserve</i>
Past Use of the Adjoining Property	<i>Same</i>
Current and Past Uses of Surrounding Area	<i>Commercial/hangars</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floor</i>

General Site Photographs

	
Description	<i>Overall building</i>
Viewing Location/Direction	<i>West</i>



Description	<i>North side building</i>
Viewing Location/Direction	<i>West</i>



Description	<i>West side of building</i>
Viewing Location/Direction	<i>East</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	Yes	Floor drain in center of building connected to municipal sanitary sewer



Interior Observation Photographs



Description

Overall interior

Viewing Location/Direction

Northwest



Description

Interior from northeast corner

Viewing Location/Direction

Southwest



Description	<i>East wall storage</i>
Viewing Location/Direction	<i>East</i>



Description	<i>Office on south side</i>
Viewing Location/Direction	<i>West</i>



Description	Central floor drain to sanitary sewer
Viewing Location/Direction	Northwest

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/22/2021

Project: Cherry Capital Airport Phase I ESA

Location: Air Services, Inc

Project Number: 2021630002.01

Address: 1100 Airport Access Rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Office space and hangars</i>
Past Use of the Property	<i>Office space and hangars</i>
Current Use of the Adjoining Property	<i>Hangars</i>
Past Use of the Adjoining Property	<i>Hangars</i>
Current and Past Uses of Surrounding Area	<i>Hangars and airport</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floors</i>

General Site Photographs



Description	<i>East side of building</i>
Viewing Location/Direction	<i>Airport Access Rd facing west</i>



Description	<i>West side of building</i>
Viewing Location/Direction	<i>Facing northeast</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type(s))	Yes	2 flush mount MWs near southeast corner outside maintenance entrance
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	



Exterior Observation Photographs



Description	<i>Flush mount MW's outside maintenance entrance in southeast corner</i>
Viewing Location/Direction	<i>Facing west</i>

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	55-gallon drums with used jet fuel and one drum with fuel and pump - observed in good condition and stored on concrete
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	Yes	Five 55-gallon drums of used fuel in northeast corner of south hangar. Two 55-gallon drums of used fuel and fluid on east wall in south hangar - good condition and stored on concrete. One 55-gallon drum with Jet fuel and pump on east wall of south hangar - in good condition and stored on concrete
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	Yes	Natural gas furnace for office areas



Condition	Observed? (Yes/No)	Comments
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

Interior Observation Photographs



Description	<i>North hangar overall</i>
Viewing Location/Direction	<i>South wall facing north</i>



Description	<i>Lounge and office on north side</i>
Viewing Location/Direction	<i>Facing east</i>



Description	<i>Lounge on north side</i>
Viewing Location/Direction	<i>Facing east</i>



Description	<i>Office in northeast corner</i>
Viewing Location/Direction	<i>Northeast</i>



Description	<i>Floor drains in north hangar</i>
Viewing Location/Direction	<i>Facing east</i>



Description	<i>Used fuel storage drums in northwest corner of south hangar</i>
Viewing Location/Direction	<i>Facing north</i>



Description	<i>South hangar from west wall</i>
Viewing Location/Direction	<i>east</i>



Description	<i>Jet fuel drum with pump on east wall</i>
Viewing Location/Direction	<i>East wall facing east</i>



Description	<i>Trench drain in south hangar</i>
Viewing Location/Direction	<i>East</i>



Description	<i>Waste fuel drums on east wall</i>
Viewing Location/Direction	<i>East wall facing east</i>



Description	<i>Upstairs storage in south hangar</i>
Viewing Location/Direction	<i>Facing east</i>



Description	Maintenance office on south side
Viewing Location/Direction	East



Description	Maintenance storage and office on south side
Viewing Location/Direction	Facing west



Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/27/2021

Project: Cherry Capital Airport Phase I ESA

Location: Fueling station north of AVFlight hangar

Project Number: 2021630002.01

Address: North of 1130 Airport Access Rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Fueling station</i>
Past Use of the Property	<i>Fueling station</i>
Current Use of the Adjoining Property	<i>Hangars, coast guard, and airport</i>
Past Use of the Adjoining Property	<i>Hangars, coast guard, and airport</i>
Current and Past Uses of Surrounding Area	<i>Hangars, coast guard, and airport</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Concrete containment around storage tanks with liner</i>

General Site Photographs



Description	<i>Overall from west</i>
Viewing Location/Direction	<i>Facing east</i>



Description	Overall from east
Viewing Location/Direction	Facing west

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	Jet Fuel - fueling station
Storage Tanks (AST and/or UST)	Yes	3 large storage tanks with Jet Fuel - in containment and in good condition. The east 2 tanks are empty and out of service. The west tank contains Jet A fuel
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	Yes	Groundwater monitoring
Septic System	No	



Condition	Observed? (Yes/No)	Comments
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

	
Description	<i>Jet fuel storage tanks</i>
Viewing Location/Direction	<i>Facing south</i>



Description	Fuel pumps and oil/water separator on left
Viewing Location/Direction	Facing south



Description	Fuel tanks in containment with liner system
Viewing Location/Direction	Facing southwest



Description	<i>Jet A fuel tank on west side</i>
Viewing Location/Direction	<i>Facing southwest</i>

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other interior conditions observed	No	

Interior Observation Photographs

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/22/2021

Project: Cherry Capital Airport Phase I ESA

Location: Kent Hangar

Project Number: 2021630002.01

Address: 1140 Airport Access Rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangar and storage</i>
Past Use of the Property	<i>Hangar and storage</i>
Current Use of the Adjoining Property	<i>Hangars and coast guard</i>
Past Use of the Adjoining Property	<i>Hangars and coast guard</i>
Current and Past Uses of Surrounding Area	<i>Hangars, storage, and coast guard</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete surface</i>

General Site Photographs

	
Description	<i>West side of building</i>
Viewing Location/Direction	<i>East</i>



Description	<i>North side of building</i>
Viewing Location/Direction	<i>Southeast</i>



Description	<i>South side of building</i>
Viewing Location/Direction	<i>Northeast</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	Yes	(2) 55 gallon drums with smoke oil on north wall - in good condition with no signs of leaking
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other interior conditions observed	No	

Interior Observation Photographs



Description	<i>North side interior</i>
Viewing Location/Direction	<i>East</i>



Description	<i>Oil drums on east wall</i>
Viewing Location/Direction	<i>Northwest</i>



Description	<i>South side interior</i>
Viewing Location/Direction	<i>East/southeast</i>



Description	<i>Main lobby/lounge</i>
Viewing Location/Direction	<i>South</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/21/2021

Project: Cherry Capital Airport Phase I ESA

Location: AVFlight Hangar

Project Number: 2021630002.01

Address: 1150 Airport Access Rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangar</i>
Past Use of the Property	<i>Hangar</i>
Current Use of the Adjoining Property	<i>Hangars/storage</i>
Past Use of the Adjoining Property	<i>Hangars/storage</i>
Current and Past Uses of Surrounding Area	<i>Hangars/commercial</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, brick office, concrete floors</i>

General Site Photographs

	
Description	<i>West side of building</i>
Viewing Location/Direction	<i>Facing east from runway</i>



Description	<i>South side of building</i>
Viewing Location/Direction	<i>Facing north</i>



Description	<i>Front of building - east side</i>
Viewing Location/Direction	<i>West</i>



Description	<i>North side of building</i>
Viewing Location/Direction	<i>Parking lot facing southeast</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type(s))	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	



Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	Yes	5 drums in southwest corner containing jet fuel icing inhibitor, 4 of them are empty. All in good condition with no signs of leaking. 5 drums on west wall containing used oil. Signs of overflow but in containment. De minimus staining on concrete outside containment
Odors – strong, pungent, or noxious	Yes	Used oil odors near oil drums
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

Interior Observation Photographs



Description	Overall Interior
Viewing Location/Direction	Northwest



Description	Drums with Jet fuel icing inhibitor
Viewing Location/Direction	Southwest corner



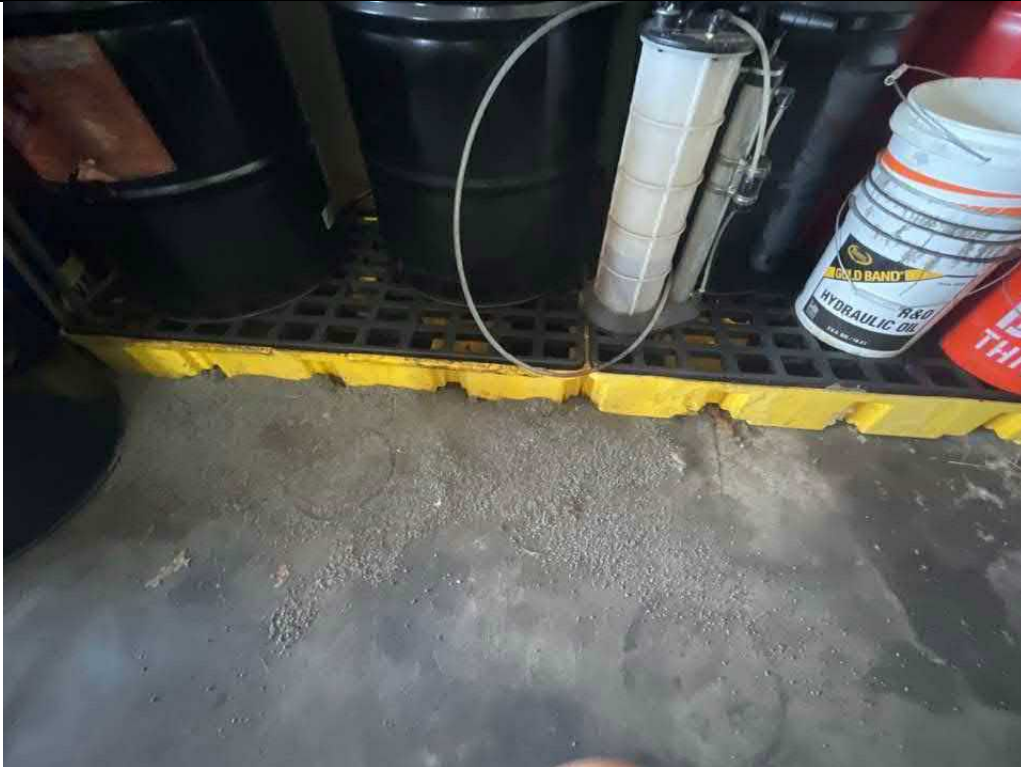
Description	Empty fuel icing inhibitor drum
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Viewing Location/Direction	Southwest corner
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Description	Used oil drums - in containment
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Viewing Location/Direction	West wall
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Description	<i>Used Oil containment with de minimus staining on concrete</i>
Viewing Location/Direction	<i>West wall</i>



Description	<i>West storage area</i>
Viewing Location/Direction	<i>West building facing north</i>



Description	Hangar office/storage room
Viewing Location/Direction	North side of building



Description	North wall storage
Viewing Location/Direction	North wall facing east



Description	<i>Upstairs storage room</i>
Viewing Location/Direction	<i>Northwest corner</i>



Description	<i>Upstairs office</i>
Viewing Location/Direction	<i>Northwest corner</i>



Description	<i>Break room</i>
Viewing Location/Direction	<i>South side center of building</i>



Description	<i>Lobby area</i>
Viewing Location/Direction	<i>East side of building</i>



Description	<i>Kitchen</i>
Viewing Location/Direction	<i>North side of lobby</i>



Description	<i>Computer/office room</i>
Viewing Location/Direction	<i>North side of lobby</i>



Description	<i>Pilot's lounge</i>
Viewing Location/Direction	<i>North side of building</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/22/2021

Project: Cherry Capital Airport Phase I ESA

Location: Denton/Giving Wings Hangar (north)

Project Number: 2021630002.01

Address: 1160 Airport Access Rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangars</i>
Past Use of the Property	<i>Hangars</i>
Current Use of the Adjoining Property	<i>Hangars and coast guard</i>
Past Use of the Adjoining Property	<i>Hangars and coast guard</i>
Current and Past Uses of Surrounding Area	<i>Hangars and coast guard</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floors</i>

General Site Photographs



Description	<i>Overall building from south</i>
Viewing Location/Direction	<i>North</i>



Description	<i>West side of building</i>
Viewing Location/Direction	<i>Facing east</i>



Description	<i>North side of building</i>
Viewing Location/Direction	<i>Southeast</i>



Description	<i>East side of building</i>
Viewing Location/Direction	<i>Northwest</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type(s))	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	



Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	Yes	Storm drains in center of east hangar. Believed to be in connection to municipal sewer

Interior Observation Photographs



Description	<i>West hangar interior</i>
Viewing Location/Direction	<i>West wall facing east</i>



Description	<i>West hangar upstairs storage</i>
Viewing Location/Direction	<i>Facing south</i>



Description	<i>Center office</i>
Viewing Location/Direction	<i>Center of building facing north</i>



Description	<i>East hangar interior</i>
Viewing Location/Direction	<i>South side facing north</i>



Description	<i>East hangar storm drains</i>
Viewing Location/Direction	<i>East wall facing west</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/22/2021

Project: Cherry Capital Airport Phase I ESA

Location: Denton/Giving Wings Hangar (south)

Project Number: 2021630002.01

Address: 1170 Airport Access Rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Office and Hangars</i>
Past Use of the Property	<i>Office and Hangars</i>
Current Use of the Adjoining Property	<i>Hangars and coast guard</i>
Past Use of the Adjoining Property	<i>Hangars and coast guard</i>
Current and Past Uses of Surrounding Area	<i>Hangars and coast guard</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Masonry to west (office), metal pole building with concrete floors</i>

General Site Photographs

	
Description	<i>Front of building (east side)</i>
Viewing Location/Direction	<i>West</i>



Description	<i>North side of building</i>
Viewing Location/Direction	<i>Southeast</i>



Description	<i>West side of building</i>
Viewing Location/Direction	<i>East</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	Fuel cans on north wall
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	Yes	(2) 55-gallon drums on north wall under the stairs - in good condition with no signs of overfill. Stored on concrete
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	



Condition	Observed? (Yes/No)	Comments
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

Interior Observation Photographs

	
Description	<i>Hallway to offices</i>
Viewing Location/Direction	<i>South</i>



Description	Office
Viewing Location/Direction	East



Description	Flight simulation room
Viewing Location/Direction	East



Description	<i>Utility room</i>
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Viewing Location/Direction	<i>East</i>
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Description	<i>Conference room on south side</i>
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Viewing Location/Direction	<i>East</i>
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Description	<i>Dispatch room on north side</i>
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Viewing Location/Direction	<i>West</i>
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Description	<i>Overall hangar interior</i>
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Viewing Location/Direction	<i>East wall facing west</i>
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Description	<i>Waste oil drums under stairs on north side</i>
Viewing Location/Direction	<i>North wall under stairs</i>



Description	<i>Fuel storage on north wall</i>
Viewing Location/Direction	<i>North wall facing north</i>



Description	<i>Storage on south wall</i>
Viewing Location/Direction	<i>Facing southeast</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/21/2021

Project: Cherry Capital Airport Phase I ESA

Location: 45 North Aviation - wash hangar

Project Number: 2021630002.01

Address: 1180 Airport Access Rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Wash hangar</i>
Past Use of the Property	<i>Hangar</i>
Current Use of the Adjoining Property	<i>Hangars and storage</i>
Past Use of the Adjoining Property	<i>Hangars and storage</i>
Current and Past Uses of Surrounding Area	<i>Hangars and storage, coast guard building</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building</i>

General Site Photographs



Description	<i>Overall of wash hangar from south</i>
Viewing Location/Direction	<i>North</i>



Description	<i>West side of building</i>
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Viewing Location/Direction	<i>East</i>
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Description	<i>Overall from east side of building</i>
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Viewing Location/Direction	<i>West</i>
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Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	Yes	Used oil AST in southwest corner - in good condition, no signs of overfill or leaking
Drums and/or Containers (> 5 gallons)	Yes	Several 55-gallon drums on east wall containing various wash chemicals, observed in good condition. 55-gallon used oil/fluid drum on west wall - in good condition with no signs of overfill or staining
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	



Condition	Observed? (Yes/No)	Comments
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

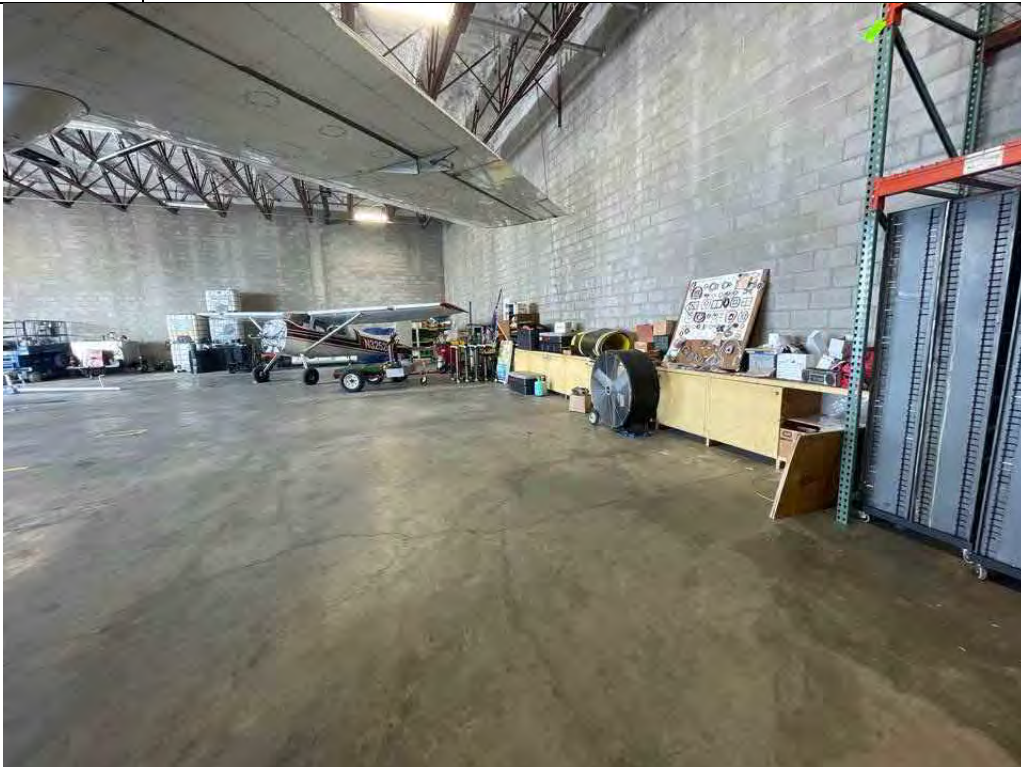
Interior Observation Photographs



Description	<i>East side of wash hangar</i>
Viewing Location/Direction	<i>North</i>



Description	<i>Drums containing various wash products</i>
Viewing Location/Direction	<i>East wall</i>



Description	<i>North wall storage</i>
Viewing Location/Direction	<i>West</i>



Description	<i>Floor drains connected to municipal sewer</i>
Viewing Location/Direction	<i>West wall facing east</i>



Description	<i>Antifreeze storage tanks and used oil drum on west wall</i>
Viewing Location/Direction	<i>West wall - center</i>



Description	Overall west side of hangar
Viewing Location/Direction	southwest corner



Description	Used oil AST in southwest corner
Viewing Location/Direction	Southwest corner facing west



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Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/21/2021

Project: Cherry Capital Airport Phase I ESA

Location: 45 North Aviation

Project Number: 2021630002.01

Address: 1190 Airport Access Rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangars</i>
Past Use of the Property	<i>Hangars</i>
Current Use of the Adjoining Property	<i>Hangars and airport tower</i>
Past Use of the Adjoining Property	<i>Hangars and airport tower</i>
Current and Past Uses of Surrounding Area	<i>Hangars/storage and coast guard</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building and wooden frame office</i>

General Site Photographs



Description	<i>Front of building - east side</i>
Viewing Location/Direction	<i>East parking area facing west</i>



Description	<i>Overall building from west</i>
Viewing Location/Direction	<i>Facing east</i>



Description	<i>North hangar (maintenance hangar) overall</i>
Viewing Location/Direction	<i>Facing east</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type(s))	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	Used oil AST
Storage Tanks (AST and/or UST)	Yes	Used Oil AST in northwest corner - good condition, no staining
Drums and/or Containers (> 5 gallons)	Yes	Various amounts of petroleum product storage in northwest corner of maintenance hangar (north hangar). 55-gallon drums of lubricant in northwest corner of maintenance hangar
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	



Condition	Observed? (Yes/No)	Comments
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

Interior Observation Photographs



Description	<i>South hangar - overall</i>
Viewing Location/Direction	<i>Southeast from northwest corner</i>



Description	<i>East wall of south hangar</i>
Viewing Location/Direction	<i>Southeast corner facing north</i>



Description	<i>Overall of south hangar from southwest corner</i>
Viewing Location/Direction	<i>Southwest corner facing northeast</i>



Description	<i>View down north wall</i>
Viewing Location/Direction	<i>Northwest corner</i>



Description	<i>Used Oil AST and petroleum product storage</i>
Viewing Location/Direction	<i>Northeast corner</i>



Description	<i>Work benches on east wall of maintenance hangar</i>
Viewing Location/Direction	<i>Center of building facing east</i>



Description	<i>Tool storage in center of building</i>
Viewing Location/Direction	<i>Center facing east</i>



Description	<i>South side of maintenance hangar</i>
Viewing Location/Direction	<i>Southwest corner facing east</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/21/2021

Project: Cherry Capital Airport Phase I ESA

Location: West T Hangars

Project Number: 2021630002.01

Address: 1210 Boon St

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangars</i>
Past Use of the Property	<i>Hangars</i>
Current Use of the Adjoining Property	<i>Hangars/commercial</i>
Past Use of the Adjoining Property	<i>Hangars/commercial</i>
Current and Past Uses of Surrounding Area	<i>Commercial/residential</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floors</i>

General Site Photographs

	
Description	<i>Overall of building</i>
Viewing Location/Direction	<i>Southwest</i>



Description	<i>Overall building</i>
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Viewing Location/Direction	<i>Southeast</i>
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Description	<i>Overall building from south</i>
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Viewing Location/Direction	<i>Northeast</i>
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Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type(s))	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other interior conditions observed	No	

Interior Observation Photographs



Description	<i>airport storage unit</i>
Viewing Location/Direction	<i>Southwest</i>



Description	<i>Unit 2</i>
Viewing Location/Direction	<i>Southwest</i>



Description	<i>Unit 4</i>
Viewing Location/Direction	<i>Southwest</i>



Description	<i>Unit 6</i>
Viewing Location/Direction	<i>Southwest</i>



Description	<i>Unit 8</i>
Viewing Location/Direction	<i>Southwest</i>



Description	<i>Unit 10</i>
Viewing Location/Direction	<i>Southwest</i>



Description	<i>East airport storage unit</i>
Viewing Location/Direction	<i>Northeast</i>



Description	<i>Unit 9</i>
Viewing Location/Direction	<i>Northeast</i>



Description	<i>Unit 7</i>
Viewing Location/Direction	<i>Northeast</i>



Description

Unit 5

Viewing Location/Direction

Northeast



Description

Unit 3

Viewing Location/Direction

Northeast



Description	<i>Unit 1</i>
Viewing Location/Direction	<i>Northeast</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/21/2021

Project: Cherry Capital Airport Phase I ESA

Location: Gokey Hangars

Project Number: 2021630002.01

Address: 1210A Boon St

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Airplane Hangars</i>
Past Use of the Property	<i>Hangars</i>
Current Use of the Adjoining Property	<i>Storage, Serra Subaru maintenance</i>
Past Use of the Adjoining Property	<i>N/A</i>
Current and Past Uses of Surrounding Area	<i>Commercial/residential</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole buildings, concrete floors</i>

General Site Photographs

	
Description	<i>Overall view of building</i>
Viewing Location/Direction	<i>North west corner</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	



Interior Observation Photographs



Description	<i>Unit 6</i>
Viewing Location/Direction	<i>South door facing east</i>



Description	<i>Unit 6</i>
Viewing Location/Direction	<i>South door facing north</i>



Description	<i>Unit 7</i>
Viewing Location/Direction	<i>North door facing northeast</i>



Description	<i>Unit 7</i>
Viewing Location/Direction	<i>Southeast corner facing northwest</i>



Description	<i>Unit 8</i>
Viewing Location/Direction	<i>North/northeast</i>



Description	<i>Unit 9</i>
Viewing Location/Direction	<i>North/northeast</i>



Description	<i>Unit 10</i>
Viewing Location/Direction	<i>Facing east</i>



Description	<i>Unit 10</i>
Viewing Location/Direction	<i>East</i>



Description	<i>Unit 1</i>
Viewing Location/Direction	<i>West</i>



Description	<i>Storage in unit 1</i>
Viewing Location/Direction	<i>West</i>



Description	<i>Unit 2</i>
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Viewing Location/Direction	<i>Southwest</i>
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Description	<i>Unit 3</i>
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Viewing Location/Direction	<i>Southeast</i>
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Description	Unit 4
Viewing Location/Direction	Southeast



Description	Unit 5
Viewing Location/Direction	Southeast



Description	<i>Unit 5 - west half</i>
Viewing Location/Direction	<i>Southwest</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/21/2021

Project: Cherry Capital Airport Phase I ESA

Location: General Aviation Terminal

Project Number: 2021630002.01

Address: 1220 Airport Access Rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Air terminal</i>
Past Use of the Property	<i>Air terminal</i>
Current Use of the Adjoining Property	<i>Airport tower and hangars</i>
Past Use of the Adjoining Property	<i>Airport tower and hangars</i>
Current and Past Uses of Surrounding Area	<i>Airport tower and hangars</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Brick and masonry construction, 2 stories</i>

General Site Photographs

	
Description	<i>Front of building - east side</i>
Viewing Location/Direction	<i>West</i>



Description	<i>Building from west side</i>
Viewing Location/Direction	<i>East</i>



Description	<i>South side of building</i>
Viewing Location/Direction	<i>North</i>



Description	<i>North side of building</i>
Viewing Location/Direction	<i>South</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type(s))	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	



Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

Interior Observation Photographs



Description	<i>Main floor lobby</i>
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Viewing Location/Direction	<i>West</i>
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Description	<i>South hallway - main floor</i>
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Viewing Location/Direction	<i>South</i>
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Description	<i>Empty office - main floor south side</i>
Viewing Location/Direction	<i>East</i>



Description	<i>North hallways - main floor</i>
Viewing Location/Direction	<i>North</i>



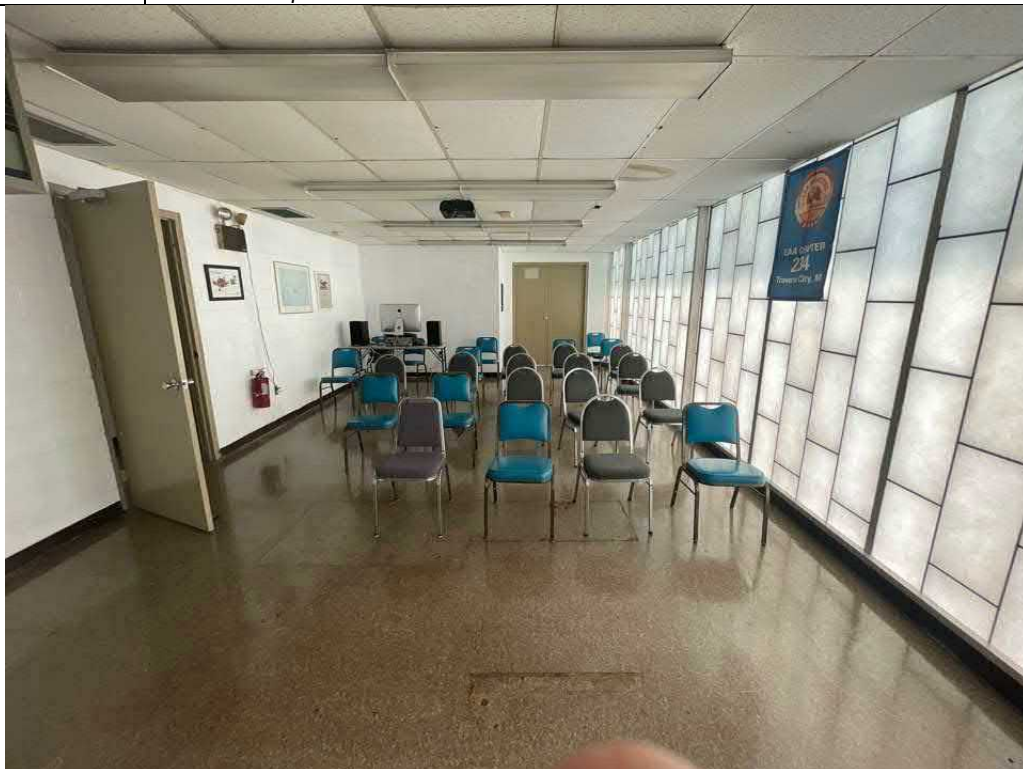
Description	North storage - main floor
Viewing Location/Direction	East



Description	Northeast office - upstairs
Viewing Location/Direction	South



Description	North side common area - upstairs
Viewing Location/Direction	North side upstairs



Description	East meeting room - upstairs
Viewing Location/Direction	East side facing north



Description	<i>South side of upstairs</i>
Viewing Location/Direction	<i>South building facing east</i>



Description	<i>East side office - upstairs</i>
Viewing Location/Direction	<i>Facing north on east side of upstairs</i>



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Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Project: Cherry Capital Airport Phase I ESA

Project Number: 2021630002.01

Completed by: Max Korndorfer

Date: 07/27/2021

Location: 1230A Boon St

Address: 1230A Boon St

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangar</i>
Past Use of the Property	<i>Hangar</i>
Current Use of the Adjoining Property	<i>Hangars, commercial/residential, airport</i>
Past Use of the Adjoining Property	<i>Hangars, commercial/residential, airport</i>
Current and Past Uses of Surrounding Area	<i>Hangars, commercial/residential, airport</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floor</i>

General Site Photographs



Description	<i>West side of hangar</i>
Viewing Location/Direction	<i>Facing northeast</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	Yes	55-gallon drum with cleaning solution in northwest corner
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	Yes	De minimus oil staining on concrete from plane drip
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other interior conditions observed	No	

Interior Observation Photographs



Description	<i>Central floor drain - dry well</i>
Viewing Location/Direction	<i>Facing east</i>



Description	<i>Storage on south wall</i>
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Viewing Location/Direction	<i>Facing southeast</i>
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Description	<i>East wall storage</i>
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Viewing Location/Direction	<i>Center of hangar facing east</i>
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Description	<i>55-gallon drum with cleaning solution</i>
Viewing Location/Direction	<i>Northwest corner facing west</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/27/2021

Project: Cherry Capital Airport Phase I ESA

Location: 1230B Boon St

Project Number: 2021630002.01

Address: 1230B Boon St

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangar</i>
Past Use of the Property	<i>Hangar</i>
Current Use of the Adjoining Property	<i>Hangars, commercial/residential, airport</i>
Past Use of the Adjoining Property	<i>Hangars, commercial/residential, airport</i>
Current and Past Uses of Surrounding Area	<i>Hangars, commercial/residential, airport</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floor</i>

General Site Photographs



Description	<i>Overall building from west</i>
Viewing Location/Direction	<i>Facing east</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other interior conditions observed	No	

Interior Observation Photographs



Description	<i>Overall interior facing east</i>
Viewing Location/Direction	<i>Facing east</i>



Description	<i>Floor drain in center</i>
Viewing Location/Direction	<i>Facing east</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/23/2021

Project: Cherry Capital Airport Phase I ESA

Location: 1230C Boon St

Project Number: 2021630002.01

Address: 1230C Boon St

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangar</i>
Past Use of the Property	<i>Hangar</i>
Current Use of the Adjoining Property	<i>Hangar, airport, and residential</i>
Past Use of the Adjoining Property	<i>Hangar, airport, and residential</i>
Current and Past Uses of Surrounding Area	<i>Hangar, airport, and residential</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floor</i>

General Site Photographs



Description	<i>General building</i>
Viewing Location/Direction	<i>From west facing east</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	Yes	55-gallon drum of used oil on south wall - good condition, stored on a pallet on concrete
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	



Condition	Observed? (Yes/No)	Comments
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	Yes	Floor drain in center - appears to be dry well

Interior Observation Photographs



Description	<i>Overall</i>
Viewing Location/Direction	<i>Southeast</i>



Description	Maintenance storage on east wall
Viewing Location/Direction	Southeast



Description	Storage on south side
Viewing Location/Direction	Facing southeast



Description	<i>Used oil drum on south wall</i>
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Viewing Location/Direction	<i>South wall facing south</i>
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Description	<i>Central floor drain - dry well</i>
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Viewing Location/Direction	<i>Central interior, top of photo is west</i>
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Description	<i>Tool shed in northeast</i>
Viewing Location/Direction	<i>Northeast facing west</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Project: Cherry Capital Airport Phase I ESA

Project Number: 2021630002.01

Completed by: Max Korndorfer

Date: 07/23/2021

Location: 1232 Boon St

Address: 1232 Boon St

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangar</i>
Past Use of the Property	<i>Hangar</i>
Current Use of the Adjoining Property	<i>Hangars and airport</i>
Past Use of the Adjoining Property	<i>Hangars and airport</i>
Current and Past Uses of Surrounding Area	<i>Hangars and airport</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floor</i>

General Site Photographs



Description	<i>West side of building</i>
Viewing Location/Direction	<i>Facing east</i>



Description	<i>South side of building</i>
Viewing Location/Direction	<i>Facing northeast</i>



Description	<i>East side of building</i>
Viewing Location/Direction	<i>Facing west</i>



Description	<i>North side of building</i>
Viewing Location/Direction	<i>Facing southwest</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other exterior conditions observed	No	

Exterior Observation Photographs

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	Yes	Floor drain in center of building - appears to be dry-well with sandy bottom

Interior Observation Photographs



Description	<i>Interior overall</i>
Viewing Location/Direction	<i>Facing west</i>



Description	<i>Storage in northwest corner</i>
Viewing Location/Direction	<i>Northwest corner facing west</i>



Description *Storage in southwest corner*

Viewing Location/Direction *Southwest corner facing*



Description *Storm drain in center - appears to be drywell with sandy bottom - no connections*

Viewing Location/Direction *Top of photo is west*



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Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Project: Cherry Capital Airport Phase I ESA

Project Number: 2021630002.01

Completed by: Max Korndorfer

Date: 07/23/2021

Location: 1234 Boon St

Address: 1234 Boon St

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangar</i>
Past Use of the Property	<i>Hangar</i>
Current Use of the Adjoining Property	<i>Hangars and airport</i>
Past Use of the Adjoining Property	<i>Hangars and airport</i>
Current and Past Uses of Surrounding Area	<i>Hangars and airport</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floor</i>

General Site Photographs



Description	<i>North side of building</i>
Viewing Location/Direction	<i>Facing east</i>



Description	<i>East side of building</i>
Viewing Location/Direction	<i>Facing west</i>



Description	<i>South side of building</i>
Viewing Location/Direction	<i>Facing north</i>



Description	<i>West side of building</i>
Viewing Location/Direction	<i>Facing east</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other exterior conditions observed	No	

Exterior Observation Photographs

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	Yes	Floor drain in center - appears to be dry well with sand in bottom for at least 3 inches

Interior Observation Photographs



Description	<i>Overall interior</i>
Viewing Location/Direction	<i>Facing west</i>



Description	<i>Overhead heat in northeast corner</i>
Viewing Location/Direction	<i>Northeast corner facing northeast</i>



Description	<i>Floor drain in center – dry well</i>
Viewing Location/Direction	<i>Center of building, top of photo is southwest</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/23/2021

Project: Cherry Capital Airport Phase I ESA

Location: 1240 Boon St

Project Number: 2021630002.01

Address: 1240 Boon St

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangar and maintenance</i>
Past Use of the Property	<i>Hangar and maintenance</i>
Current Use of the Adjoining Property	<i>Hangars and airport</i>
Past Use of the Adjoining Property	<i>Hangars and airport</i>
Current and Past Uses of Surrounding Area	<i>Hangars and airport</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floors</i>

General Site Photographs



Description	<i>South side of building</i>
Viewing Location/Direction	<i>Facing north</i>



Description	<i>East side of building</i>
Viewing Location/Direction	<i>Facing west</i>



Description	<i>West side of building</i>
Viewing Location/Direction	<i>Facing east</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type(s))	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

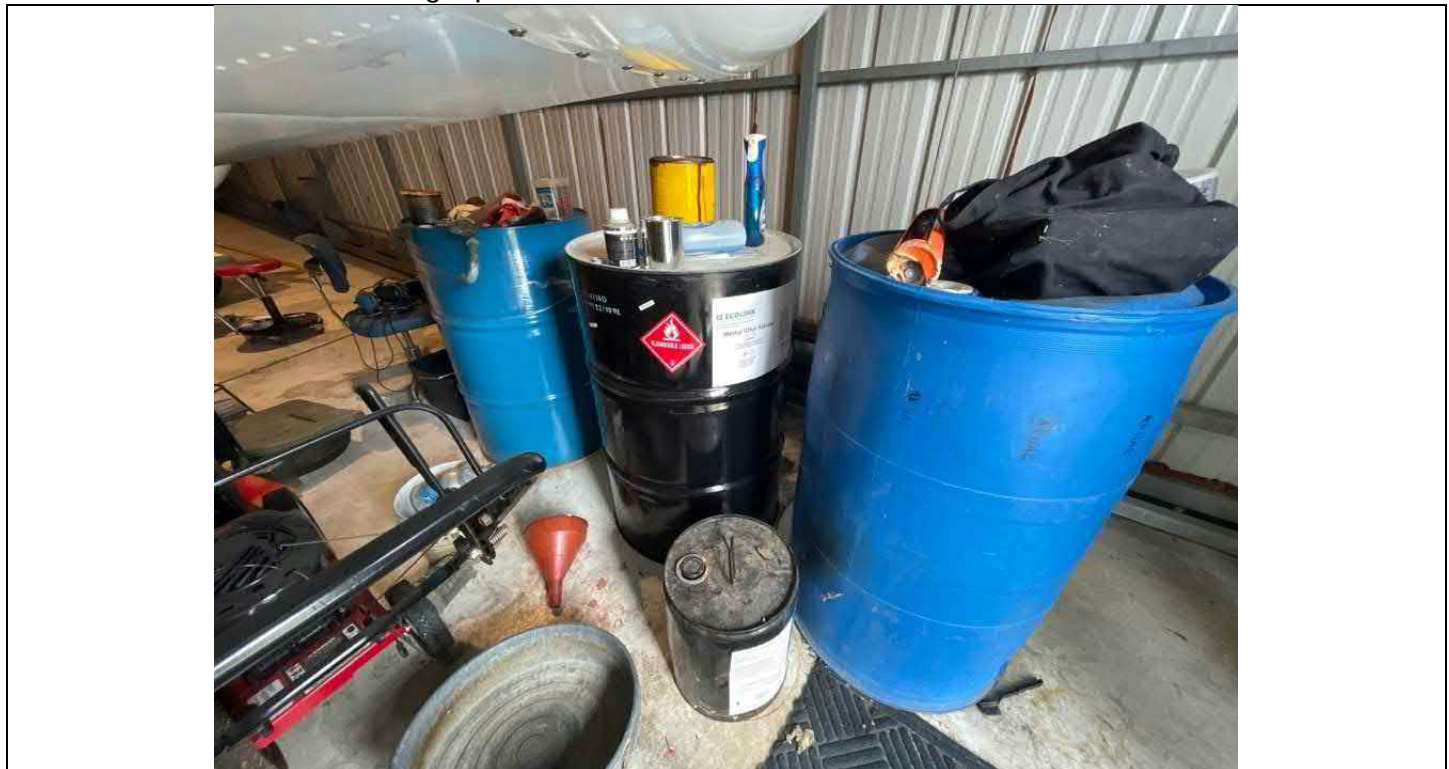
Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	Waste oil drums near northwest corner
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	Yes	Several 55-gallon drums containing MEK, observed to be in good condition and stored on concrete. Two 55-gallon drums of waste oil near northwest corner, stored on concrete with no signs of leaking or overfill
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	



Condition	Observed? (Yes/No)	Comments
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	Yes	Large plane in center was leaking oil, there was a drip pan below and cardboard over the concrete to contain

Interior Observation Photographs



Description	55-gallon drums with MEK
Viewing Location/Direction	Southwest corner facing south



Description	Maintenance work bench on west wall
Viewing Location/Direction	West wall facing west



Description	Used oil drums near northwest corner
Viewing Location/Direction	Northwest corner facing west



Description	<i>Storage on north wall</i>
Viewing Location/Direction	<i>North wall facing north</i>



Description	<i>55-gallon drums with MEK on east wall</i>
Viewing Location/Direction	<i>East wall facing north</i>



Description	<i>Overall interior from southeast corner</i>
Viewing Location/Direction	<i>Southeast corner facing northwest</i>



Description	<i>Part storage in northwest corner</i>
Viewing Location/Direction	<i>Northwest corner facing northwest</i>



Description	<i>Upstairs storage in northwest corner</i>
Viewing Location/Direction	<i>Northwest corner facing north</i>



Description	<i>Oil leaking from large old plane in center</i>
Viewing Location/Direction	<i>Center of hangar facing east</i>



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Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/22/2021

Project: Cherry Capital Airport Phase I ESA

Location: Avflight West Hangar

Project Number: 2021630002.01

Address: 1260 Turbull

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangars</i>
Past Use of the Property	<i>Hangars</i>
Current Use of the Adjoining Property	<i>Hangars/storage and commercial</i>
Past Use of the Adjoining Property	<i>Hangars/storage and commercial</i>
Current and Past Uses of Surrounding Area	<i>Hangars/storage and commercial</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floor</i>

General Site Photographs

	
Description	<i>South side of building</i>
Viewing Location/Direction	<i>North</i>



Description	<i>East side of building</i>
Viewing Location/Direction	<i>West</i>



Description	<i>West side of building</i>
Viewing Location/Direction	<i>East</i>



Description	<i>North side of building</i>
Viewing Location/Direction	<i>Facing southeast</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	Yes	Potential underground storage tanks on west side of building, concrete pad with manhole covers. Appears to be a holding tank for septic/sewer.
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other exterior conditions observed	No	

Exterior Observation Photographs

	
Description	<i>Potential underground storage tanks for septic/sewer</i>
Viewing Location/Direction	<i>West side of building, top of photo is east</i>



Description	<i>Potential storage tank location</i>
Viewing Location/Direction	<i>West side of building facing east</i>

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other interior conditions observed	Yes	Storm drain in center of building, appears to be dry-well and sealed

Interior Observation Photographs



Description	<i>Overall interior</i>
Viewing Location/Direction	<i>Facing north</i>



Description	<i>Storm drain in center of building</i>
Viewing Location/Direction	<i>Facing north</i>



Description	<i>North wall storage</i>
Viewing Location/Direction	<i>Facing east</i>



Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/21/2021

Project: Cherry Capital Airport Phase I ESA

Location: North Flight AeroMed

Project Number: 2021630002.01

Address: 1840 Stultz Dr

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>AeroMed hangar and living quarters/offices</i>
Past Use of the Property	<i>AeroMed hangar and living quarters/offices</i>
Current Use of the Adjoining Property	<i>Control tower, coast guard, and hangars</i>
Past Use of the Adjoining Property	<i>Control tower, coast guard, and hangars</i>
Current and Past Uses of Surrounding Area	<i>Same as present</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building with masonry base. Concrete floors</i>

General Site Photographs



Description	<i>East side of hangars</i>
Viewing Location/Direction	<i>West</i>



Description	<i>South side of east hangar and office entrance</i>
Viewing Location/Direction	<i>West</i>



Description	<i>North side of building/offices</i>
Viewing Location/Direction	<i>South</i>



Description	<i>West side of building - storm water runoff basin in foreground</i>
Viewing Location/Direction	<i>East</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	Yes	Storm water basin on east side
Well (if yes, note type(s))	Yes	Monitoring well near storm water basin on east side
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	



Exterior Observation Photographs



Description	<i>Monitoring well near storm water basin on east side of building</i>
Viewing Location/Direction	<i>Northwest</i>

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	Yes	Empty drums for leftover fuel in east hangar. Used oil and used fuel drums in chemical storage, observed to be in containment and good condition
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	



Condition	Observed? (Yes/No)	Comments
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

Interior Observation Photographs



Description	<i>East hangar</i>
Viewing Location/Direction	<i>North</i>



Description	Empty drums for fuel transport
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Viewing Location/Direction	East wall
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Description	West hangar overall
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Viewing Location/Direction	Northwest
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Description *Oxygen and nitrogen storage room*

Viewing Location/Direction *West wall*



Description *Fitness area*

Viewing Location/Direction *West wall of west hangar*



Description	<i>Break room</i>
Viewing Location/Direction	<i>West side</i>



Description	<i>Comm room</i>
Viewing Location/Direction	<i>Central building</i>



Description	<i>Crew quarters</i>
Viewing Location/Direction	<i>Various locations</i>



Description	<i>Conference room</i>
Viewing Location/Direction	<i>North side of building</i>



Description	Utility room
Viewing Location/Direction	Central building



Description	Hazardous chemical storage room
Viewing Location/Direction	North side of hangars



Description	Used oil drums and fuel drums
Viewing Location/Direction	Hazmat storage room



Description	Maintenance room
Viewing Location/Direction	North side of hangars



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Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/22/2021

Project: Cherry Capital Airport Phase I ESA

Location: 1851 Stultz Dr

Project Number: 2021630002.01

Address: 1851 Stultz Dr

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Storage</i>
Past Use of the Property	<i>Storage</i>
Current Use of the Adjoining Property	<i>Storage, coast guard, hangars</i>
Past Use of the Adjoining Property	<i>Storage, coast guard, hangars</i>
Current and Past Uses of Surrounding Area	<i>Storage, coast guard, hangars</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface and gravelly topsoil</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floor</i>

General Site Photographs



Description	<i>South side of building</i>
Viewing Location/Direction	<i>North</i>



Description	<i>West side of building</i>
Viewing Location/Direction	<i>East</i>



Description	<i>East side of building</i>
Viewing Location/Direction	<i>West</i>



Description	North side of building
Viewing Location/Direction	South

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type(s))	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	



Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	Yes	Natural gas/electric overhead heating
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	Yes	Storm drain in center

Interior Observation Photographs



Description	<i>East half interior</i>
Viewing Location/Direction	<i>Facing south</i>



Description	<i>West half interior</i>
Viewing Location/Direction	<i>Facing north</i>



Description	<i>Storm drain in center of east half</i>
Viewing Location/Direction	<i>Facing north</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/21/2021

Project: Cherry Capital Airport Phase I ESA

Location: 1901 Stulz Dr

Project Number: 2021630002.01

Address: 1901 Stulz Dr

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Storage</i>
Past Use of the Property	<i>Storage</i>
Current Use of the Adjoining Property	<i>Storage, hangars, AeroMed, Coast Guard, control tower</i>
Past Use of the Adjoining Property	<i>Same as current</i>
Current and Past Uses of Surrounding Area	<i>Storage, hangars, AeroMed, Coast Guard, and control tower</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floor</i>

General Site Photographs

	
Description	<i>South side of building</i>
Viewing Location/Direction	<i>North</i>



Description	<i>East side of building</i>
Viewing Location/Direction	<i>West</i>



Description	<i>North side of building</i>
Viewing Location/Direction	<i>South</i>



Description	<i>West side of building</i>
Viewing Location/Direction	<i>East</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type(s))	Yes	Groundwater monitoring wells
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	



Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	Yes	De minimus staining on concrete in bays
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	Yes	Storm drain and trench drain in each bay of building, unknown connection

Interior Observation Photographs



Description

East bay

Viewing Location/Direction

Facing south



Description

West bay

Viewing Location/Direction

Facing northwest



Description

Trench drain

Viewing Location/Direction

Central west bay



Description

Storm drain in east bay

Viewing Location/Direction

Top of photo is west



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Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/22/2021

Project: Cherry Capital Airport Phase I ESA

Location: AVFlight East Hangar

Project Number: 2021630002.01

Address: 1902 Stultz Dr

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangar</i>
Past Use of the Property	<i>Hangar</i>
Current Use of the Adjoining Property	<i>AeroMed, coast guard, and storage buildings</i>
Past Use of the Adjoining Property	<i>AeroMed, coast guard, and storage buildings</i>
Current and Past Uses of Surrounding Area	<i>AeroMed, coast guard, and storage buildings</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floor</i>

General Site Photographs



Description	<i>West side of building</i>
Viewing Location/Direction	<i>East</i>



Description	<i>South side of building</i>
Viewing Location/Direction	<i>North</i>



Description	<i>East side of building</i>
Viewing Location/Direction	<i>West</i>



Description	North side of building
Viewing Location/Direction	South

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	Fueling station to the west of building
Storage Tanks (AST and/or UST)	Yes	AVGas storage tank west of building, stored on concrete and in good condition with no signs of leaking or overfill. Empty fuel storage tank and empty water tanks near southeast corner of building
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	



Condition	Observed? (Yes/No)	Comments
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

Description	AVGas fueling pump
Viewing Location/Direction	West of building facing north



Description	AVGas fuel storage tank
Viewing Location/Direction	West of building, facing west



Description	AVGas storage tank - from northwest
Viewing Location/Direction	West of building facing southeast



Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	Yes	8 large storage tanks containing antifreeze in the southeast corner, observed to be in good condition
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	Yes	Storm drains in hangar, unknown connection

Interior Observation Photographs



Description	<i>Overall interior of hangar</i>
Viewing Location/Direction	<i>North</i>



Description	<i>West wall storage</i>
Viewing Location/Direction	<i>West wall facing northwest</i>



Description	<i>Storm drain near northwest corner</i>
Viewing Location/Direction	<i>Northwest corner facing southeast</i>



Description	<i>Storm drain near southwest corner</i>
Viewing Location/Direction	<i>Northwest corner facing West</i>



Description	<i>Storm drain near southwest corner</i>
Viewing Location/Direction	<i>Southwest corner facing east</i>



Description	<i>Anti-freeze storage tanks in southeast corner</i>
Viewing Location/Direction	<i>Southeast corner facing southeast</i>



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Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/21/2021

Project: Cherry Capital Airport Phase I ESA

Location: 2050 Stultz Drive

Project Number: 2021630002.01

Address: 2050 Stultz Drive

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Storage</i>
Past Use of the Property	<i>Storage</i>
Current Use of the Adjoining Property	<i>Storage, airport tower, hangars and AeroMed</i>
Past Use of the Adjoining Property	<i>Storage, airport tower, hangars and AeroMed</i>
Current and Past Uses of Surrounding Area	<i>Storage, airport tower, hangars and AeroMed</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface with gravelly topsoil around</i>
General Description of Buildings and Improvements	<i>Metal pole building with concrete floors</i>

General Site Photographs

	
Description	<i>North side of building</i>
Viewing Location/Direction	<i>South</i>



Description	<i>West side of building</i>
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Viewing Location/Direction	<i>East</i>
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Description	<i>East side of building</i>
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Viewing Location/Direction	<i>Facing west</i>
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Description	<i>South side of building</i>
Viewing Location/Direction	<i>North</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	



Exterior Observation Photographs

See above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	Yes	Water tank inside - observed empty and good condition
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

Interior Observation Photographs



Description	<i>West side interior</i>
Viewing Location/Direction	<i>Facing north</i>



Description	<i>Storage on east interior</i>
Viewing Location/Direction	<i>Facing north</i>



Description	<i>Water tank in storage</i>
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Viewing Location/Direction	<i>Facing north</i>
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Description	<i>Clean out</i>
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Viewing Location/Direction	<i>Facing north</i>
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Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/21/2021

Project: Cherry Capital Airport Phase I ESA

Location: Aero park Hangars

Project Number: 2021630002.01

Address: 2702 Aero Park Dr

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Hangars</i>
Past Use of the Property	<i>Hangars</i>
Current Use of the Adjoining Property	<i>Commercial business park and airport</i>
Past Use of the Adjoining Property	<i>Commercial business park and airport</i>
Current and Past Uses of Surrounding Area	<i>Commercial business park and airport</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Metal pole building, concrete floors</i>

General Site Photographs



Description	<i>Overall hangar from southeast corner</i>
Viewing Location/Direction	<i>Facing northwest</i>



Description	<i>Overall hangar from northeast corner</i>
Viewing Location/Direction	<i>Southwest</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other exterior conditions observed	No	

Exterior Observation Photographs

Description	
Viewing Location/Direction	

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	Yes	De minimus oil stains on concrete from plane storage.
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	Yes	de minimus oil dripping below plane in Hangar 2. Dripping into cardboard on concrete pavement

Interior Observation Photographs



Description	Overall interior - Unit 4
Viewing Location/Direction	Northwest



Description	Unit 4 West wall storage
Viewing Location/Direction	Northwest



Description	<i>Unit 4 north wall storage</i>
Viewing Location/Direction	<i>Northeast</i>



Description	<i>South side interior - Unit 5</i>
Viewing Location/Direction	<i>Facing west</i>



Description	Northeast storage - Unit 5
Viewing Location/Direction	Facing west



Description	West wall storage - unit 5
Viewing Location/Direction	Facing west



Description	North side interior - unit 5
Viewing Location/Direction	Facing west



Description	South half interior - Unit 2
Viewing Location/Direction	Facing west



Description	<i>Unit 2 - west wall</i>
Viewing Location/Direction	<i>Facing north</i>



Description	<i>Unit 2 - north half interior</i>
Viewing Location/Direction	<i>Facing west</i>



Description	<i>Minimal oil dripping below plane - Unit 2</i>
Viewing Location/Direction	<i>Facing northwest</i>



Description	<i>Unit 1 - south interior</i>
Viewing Location/Direction	<i>Facing northwest</i>



Description	<i>Unit 1 - north side interior</i>
Viewing Location/Direction	<i>West</i>



Description	<i>Unit 1 - west wall storage</i>
Viewing Location/Direction	<i>Facing south</i>



Description	<i>Unit 1 - southwest lounge area</i>
Viewing Location/Direction	<i>Facing west</i>



Description	<i>Unit 3 Interior</i>
Viewing Location/Direction	<i>Facing northeast</i>



Description	<i>Unit 3 - propylene glycol storage in northwest corner</i>
Viewing Location/Direction	<i>Facing west</i>



Description	<i>Unit 3 interior overall</i>
Viewing Location/Direction	<i>Facing southwest</i>



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Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/15/2021

Project: Cherry Capital Airport Phase I ESA

Location: ARFF Station (Aircraft Rescue and Fire Fighting)

Project Number: 2021630002.01

Address: 3425 Wright Drive

Completed by: Peter Kallioinen

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Fire fighting station</i>
Past Use of the Property	
Current Use of the Adjoining Property	<i>Airport</i>
Past Use of the Adjoining Property	
Current and Past Uses of Surrounding Area	
Notable Geologic, Hydrologic, Topographic Characteristics of Property	
General Description of Buildings and Improvements	

General Site Photographs



Description	<i>North side of fire station</i>
Viewing Location/Direction	<i>Looking west</i>



Description	<i>Storm catch basin and detention basin in background</i>
Viewing Location/Direction	<i>Looking northwest from north side of fire station</i>



Description	<i>Backup generator building, 100-gallon diesel UST is beneath building</i>
Viewing Location/Direction	<i>Looking southwest, south of fire station</i>



Description	<i>South side of fire station</i>
Viewing Location/Direction	<i>Looking north</i>



Description	<i>South side of fire station</i>
Viewing Location/Direction	<i>Looking northwest</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	UST
Storage Tanks (AST and/or UST)	Yes	Diesel UST beneath generator building ~100 gallons
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	Yes	Detention basin north of building
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater Discharges	Yes	Storm water basins in driveway north of building enter detention basin
Well (if yes, note type(s))	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

See general photographs above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	Class B Fire-fighting foam (AFFF) stored in drums
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	Yes	Fire-fighting foam stored in drums
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	Yes	Natural gas
Stains and/or Corrosion	Yes	Minor stains around floor drain in AFFF storage area
Sumps and/or Pumps	No	



Condition	Observed? (Yes/No)	Comments
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

Interior Observation Photographs

	
Description	<i>Fire fighting foam storage area</i>
Viewing Location/Direction	<i>East side of fire station</i>



Description	Drum label
Viewing Location/Direction	ARFF storage area



Description	Deicer trailer
Viewing Location/Direction	Fire fighting building bay



Description	<i>Typical view of garage bay, floor drain in center with staining</i>
Viewing Location/Direction	<i>Looking northwest</i>



Description	<i>Floor drain with oil-water separator manhole on background</i>
Viewing Location/Direction	<i>Fire fighting building garage, looking southwest</i>



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Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/22/2021

Project: Cherry Capital Airport Phase I ESA

Location: AV Flight - south fueling station

Project Number: 2021630002.01

Address: South of 45 North buildings

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Fueling station</i>
Past Use of the Property	<i>Fueling station</i>
Current Use of the Adjoining Property	<i>Hangars and airport tower</i>
Past Use of the Adjoining Property	<i>Hangars and airport tower</i>
Current and Past Uses of Surrounding Area	<i>Hangars and airport tower</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, concrete surface</i>
General Description of Buildings and Improvements	<i>Concrete containment with metal storage tanks</i>

General Site Photographs

	
Description	<i>Overall photo</i>
Viewing Location/Direction	<i>Southeast</i>



Description	<i>Fuel tanks from south</i>
Viewing Location/Direction	<i>North</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	Jet Fuel tanks and fueling station
Storage Tanks (AST and/or UST)	Yes	3 large storage tanks for Jet fuel, one contains AV Fuel and 2 contain Jet A fuel. Observed in good condition and in containment
Drums and/or Containers (> 5 gallons)	Yes	3 55-gallon drums on west side used for waste oil and waste fuel. No signs of historical overflow or leaking
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	Yes	Stained pavement next to Jet A pump with absorbent material on top. On concrete and within containment
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	



Condition	Observed? (Yes/No)	Comments
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs



Description	<i>Fuel pump and lines - east</i>
Viewing Location/Direction	<i>South</i>



Description *Fuel pump and lines - west*

Viewing Location/Direction *South*



Description *AVGas fuel tank*



Viewing Location/Direction | Southeast



Description | Jet A fuel tanks

Viewing Location/Direction | South



Description | Waste fuel and waste oil drums



Viewing Location/Direction	Southwest
	
Description	Oil/water separator unit for trucks with signs of historical leak
Viewing Location/Direction	South

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other interior conditions observed	No	

Interior Observation Photographs

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/15/2021

Project: Cherry Capital Airport Phase I ESA

Location: Car Wash

Project Number: 2021630002.01

Address: 3250 Wright Drive

Completed by: Peter Kallioinen

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Car wash</i>
Past Use of the Property	<i>Same</i>
Current Use of the Adjoining Property	<i>Fueling facility for rental cars north of car wash. Parking lots and driveways east, south, and west.</i>
Past Use of the Adjoining Property	
Current and Past Uses of Surrounding Area	
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Nothing relevant to study</i>
General Description of Buildings and Improvements	<i>Built in 2005, six self service bays, one automatic bay, floor drains</i>

General Site Photographs



Description	<i>Typical view</i>
Viewing Location/Direction	<i>Looking southeast</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	Unleaded gasoline AST
Storage Tanks (AST and/or UST)	Yes	Unleaded gasoline AST north of car wash
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	Yes	Dumpster secured within fence
Wastewater and/or Stormwater Discharges	Yes	Storm water enters catch basins throughout exterior, including AST area
Well (if yes, note type{s})	No	
Septic System	Yes	Floor drains flow into underground tanks on north side of building
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	Yes	Underground tanks from floor drains on north side of building



Exterior Observation Photographs



Description	<i>Gasoline AST north of car wash</i>
Viewing Location/Direction	<i>Looking northeast</i>



Description	<i>Storm sewer next to gasoline pumps</i>
Viewing Location/Direction	<i>Looking northeast</i>



Description	<i>Typical exterior view</i>
Viewing Location/Direction	<i>Looking southwest from east side of car wash</i>



Description	<i>Underground rinseate tanks adjacent to sanitary sewer</i>
Viewing Location/Direction	<i>Tanks and sewer manholes in north side of building, looking west</i>



Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	Drums and containers
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	Yes	Drums with cleaning products, 5-gallon containers with oil, epoxy
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	Yes	Natural gas
Stains and/or Corrosion	No	
Sumps and/or Pumps	Yes	Floor drains, oil-water separator? Underground tanks
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	



Interior Observation Photographs



Description	<i>Interior of storage and operations room</i>
Viewing Location/Direction	<i>Looking south</i>



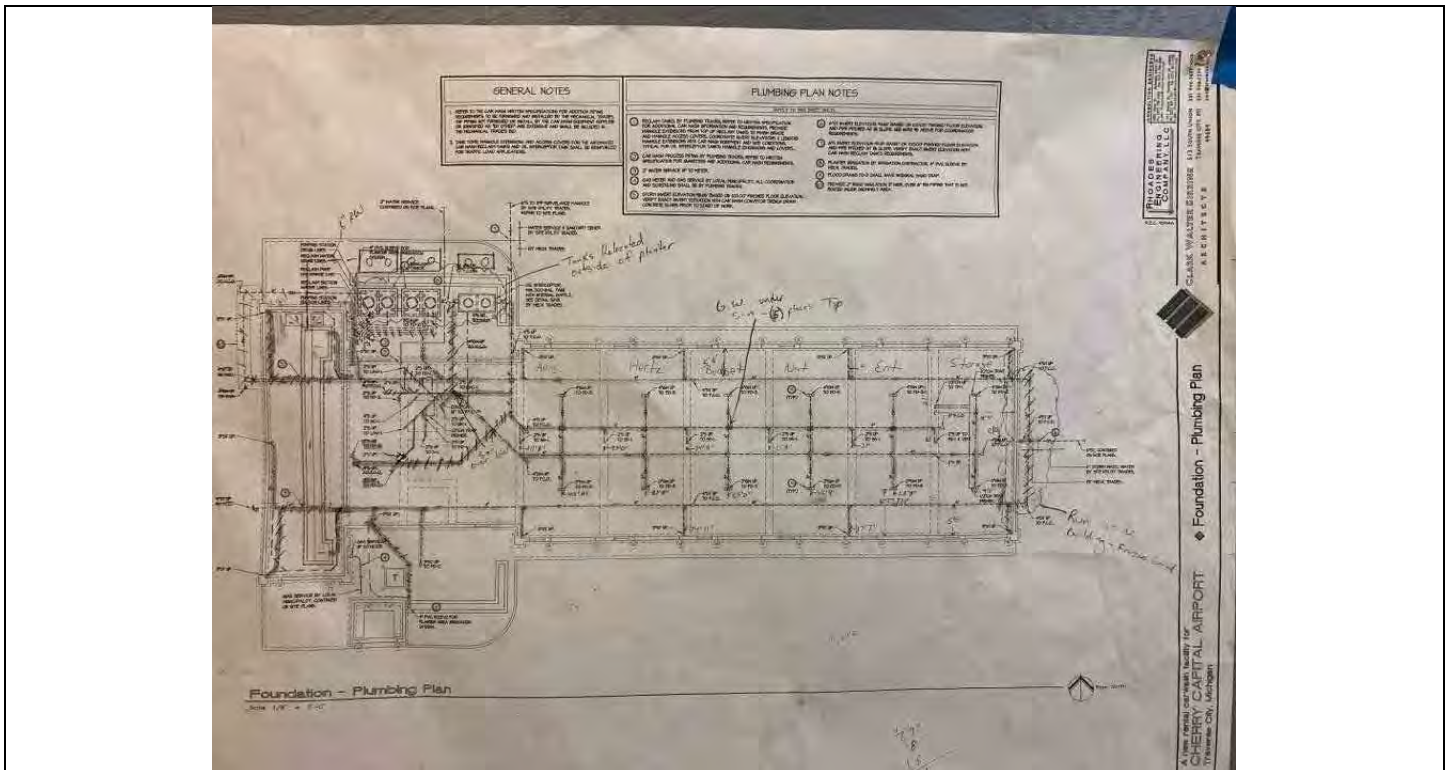
Description	<i>Cleaning agents</i>
Viewing Location/Direction	<i>Interior</i>



Description	<i>Compressor, condensate line to floor drain, drum with wax</i>
Viewing Location/Direction	<i>Operations room</i>



Description	<i>Car wash service bay with floor drains</i>
Viewing Location/Direction	<i>Looking south</i>



Description	Plumbing plan
Viewing Location/Direction	Operations room

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/15/2021

Project: Cherry Capital Airport Phase I ESA

Location: Sand Storage Building

Project Number: 2021630002.01

Address: 3375A Wright Drive

Completed by: Peter Kallioinen

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Sand storage</i>
Past Use of the Property	
Current Use of the Adjoining Property	<i>North is the SRE and Maintenance Building, east is a driveway and fueling area, south is vacant, west is runway and drive</i>
Past Use of the Adjoining Property	
Current and Past Uses of Surrounding Area	<i>Airport facilities</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Nothing relevant to study</i>
General Description of Buildings and Improvements	<i>Single concrete block structure, slab on grade, shingles on roof</i>

General Site Photographs



Description	<i>Sand storage building</i>
Viewing Location/Direction	<i>Looking northwest</i>



Description	<i>South side of sand storage building</i>
Viewing Location/Direction	<i>Looking north</i>



Description	<i>Sand storage building</i>
Viewing Location/Direction	<i>Looking southwest</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	ASTs
Storage Tanks (AST and/or UST)	Yes	One unleaded gasoline, one diesel AST east of sand storage building
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	Yes	Surface drains in AST area enter small depressions, dissipates
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater Discharges	No	Storm water enters catch basins or dissipates on ground surface
Well (if yes, note type(s))	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs



Description	<i>ASTs and drains</i>
Viewing Location/Direction	<i>Looking southwest</i>



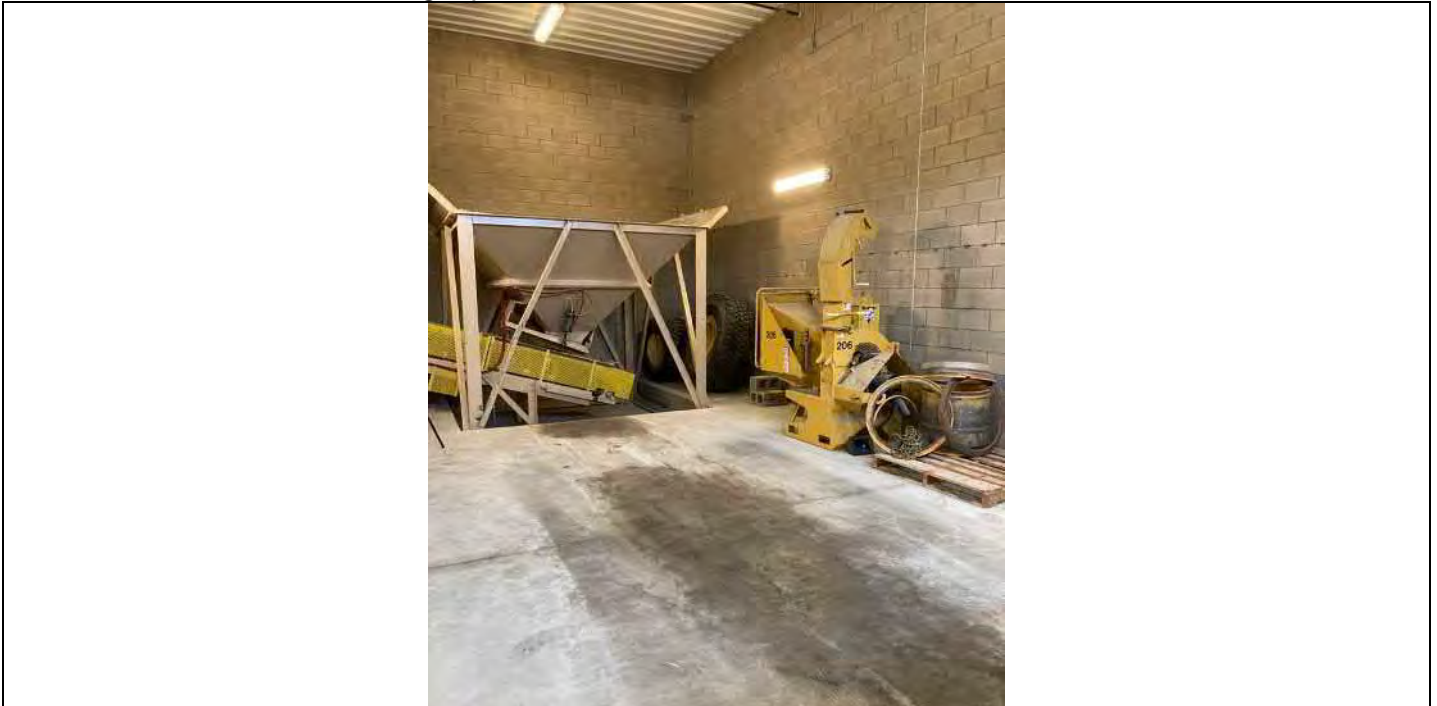
Description	ASTs and drain
Viewing Location/Direction	Looking southeast

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	Yes	Minor oil stains on floor of north bay contained on surface
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	



Interior Observation Photographs



Description	<i>North bay with equipment and floor stain</i>
Viewing Location/Direction	<i>Looking west</i>



Description	<i>Sand storage bays</i>
Viewing Location/Direction	<i>Looking west</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/15/2021

Project: Cherry Capital Airport Phase I ESA

Location: Snow and ice removal equipment and maintenance building (SRE)

Project Number: 2021630002.01

Address: 3375 Wright Drive

Completed by: Peter Kallioinen

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Snow and ice removal equipment storage and maintenance</i>
Past Use of the Property	
Current Use of the Adjoining Property	<i>North is the runway and storm water detention basin, east is a parking lot and ARFF building, south is a driveway and sand storage building, west is a driveway and runway</i>
Past Use of the Adjoining Property	
Current and Past Uses of Surrounding Area	<i>Airport</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Storm water drains into detention basin north of site</i>
General Description of Buildings and Improvements	<i>Concrete block construction, slab on grade, shingled wood roof</i>

General Site Photographs



Description	<i>South side SRE building</i>
Viewing Location/Direction	<i>Looking north</i>



Description	<i>West side of building and recent AFFF spill</i>
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Viewing Location/Direction	<i>Looking east</i>
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Description	<i>SRE building</i>
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Viewing Location/Direction	<i>Looking southeast</i>
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Description	Storage tanks for deicer
Viewing Location/Direction	West side of building



Description	AFFF spill around storm drain
Viewing Location/Direction	West side of building



Description	<i>AFFF spill containment around catch basin</i>
Viewing Location/Direction	<i>West side of building</i>



Description	<i>East side of SRE building</i>
Viewing Location/Direction	<i>Looking west</i>



Description	<i>Propylene glycol totes</i>
Viewing Location/Direction	<i>South side of SRE building</i>



Description	<i>Paint and other totes</i>
Viewing Location/Direction	<i>South side of building</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	Paint and antifreeze totes storage on south side of building
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	Yes	Totes on south side of building
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	Yes	Recent AFFF spill on west side of building
Stressed Vegetation	No	
Solid Waste	Yes	In totes on south side of building
Wastewater and/or Stormwater	Yes	AFFF entered storm sewer catch basin
Well (if yes, note type(s))	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	Yes	Drums, containers, AST
Storage Tanks (AST and/or UST)	Yes	250-gallon AST used for oil, in containment
Drums and/or Containers (> 5 gallons)	Yes	Motor oil in 5-gallon containers, driving liquids in totes
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	Yes	Natural gas
Stains and/or Corrosion	Yes	Minor oil stains contained on floor
Sumps and/or Pumps	Yes	Floor drains, unknown exit
Any limitations that inhibited ability to observe interior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other interior conditions observed	No	

Interior Observation Photographs

	
Description	<i>Floor drain and fire truck</i>
Viewing Location/Direction	<i>Inside south service bay</i>



Description	<i>Driving liquid totes</i>
Viewing Location/Direction	<i>South service bay</i>



Description	<i>Traffic paint storage</i>
Viewing Location/Direction	<i>South service bay</i>



Description	Main maintenance area
Viewing Location/Direction	SRE building, looking northeast



Description	Waste oil and paint totes
Viewing Location/Direction	Main maintenance area in SRE building



Description	<i>Oil drums, totes, empty drums on left, minor staining on floor</i>
Viewing Location/Direction	<i>Main maintenance area</i>



Description	<i>Sodium formate storage</i>
Viewing Location/Direction	<i>A north bay</i>



Description	<i>Floor stains in maintenance area near floor drain</i>
Viewing Location/Direction	<i>Main maintenance area in SRE building</i>



Description	<i>Small container storage, oil, other petroleum products</i>
Viewing Location/Direction	<i>Storage room in SRE building</i>



Description	<i>Oil AST</i>
Viewing Location/Direction	<i>Main maintenance area in SRE building</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/15/2021

Project: Cherry Capital Airport Phase I ESA

Location: Terminal

Project Number: 2021630002.01

Address: 727 Fly Don't Drive

Completed by: Peter Kallioinen

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Airport terminal</i>
Past Use of the Property	<i>Same</i>
Current Use of the Adjoining Property	<i>Airport facilities</i>
Past Use of the Adjoining Property	<i>Airport facilities</i>
Current and Past Uses of Surrounding Area	<i>Same</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Nothing relevant to this study</i>
General Description of Buildings and Improvements	<i>Typical airport terminal</i>

General Site Photographs



Description	<i>South side of terminal, west side near car rental area</i>
Viewing Location/Direction	<i>Looking east</i>



Description	<i>West side of terminal</i>
Viewing Location/Direction	<i>Looking east</i>



Description	<i>Car rental parking lot west of terminal</i>
Viewing Location/Direction	<i>Looking northwest</i>



Description	<i>North side of terminal</i>
Viewing Location/Direction	<i>Looking northeast</i>



Description	<i>South side of terminal</i>
Viewing Location/Direction	<i>Looking west</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater Discharges	Yes	Storm water enters catch basins connected to detention basin
Well (if yes, note type(s))	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	Yes	Could not enter restricted area (north side) of terminal
Other exterior conditions observed	No	

Exterior Observation Photographs

See general photographs above

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	Yes	Floor wax in janitor closet, 5-gallon container
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	Yes	Natural gas
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	



Condition	Observed? (Yes/No)	Comments
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

Interior Observation Photographs



Description	<i>Storage room with cleaning products</i>
Viewing Location/Direction	<i>Interior of terminal</i>



Description	<i>Janitor closet with various cleaning products</i>
Viewing Location/Direction	<i>Interior of terminal</i>

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/22/2021

Project: Cherry Capital Airport Phase I ESA

Location: East clear zone

Project Number: 2021630002.01

Address: East of south airport rd

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Vacant clear zone</i>
Past Use of the Property	<i>Vacant clear zone</i>
Current Use of the Adjoining Property	<i>Airport, commercial, and natural wooded land</i>
Past Use of the Adjoining Property	<i>Airport, commercial, and natural wooded land</i>
Current and Past Uses of Surrounding Area	<i>Airport, commercial, and natural wooded land</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, creek through property, gravelly topsoil</i>
General Description of Buildings and Improvements	<i>Gravel drive through center and on edges</i>

General Site Photographs

	
Description	<i>Overall from center on south airport</i>
Viewing Location/Direction	<i>East</i>



Description	<i>West side of creek facing south</i>
Viewing Location/Direction	<i>South</i>



Description	<i>West side of creek facing north</i>
Viewing Location/Direction	<i>North</i>



Description	<i>East side of creek from northwest corner</i>
Viewing Location/Direction	<i>Southeast</i>



Description	<i>East side of creek from center</i>
Viewing Location/Direction	<i>East</i>



Description	<i>East side of creek from northeast corner</i>
Viewing Location/Direction	<i>Southwest</i>



Description	<i>East side of creek from southeast corner</i>
Viewing Location/Direction	<i>Northwest</i>



Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	Yes	Stormwater pond gathers discharge from City industrial park
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type(s))	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	
Other exterior conditions observed	No	

Exterior Observation Photographs

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	



Condition	Observed? (Yes/No)	Comments
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

Interior Observation Photographs

Other Notes or Observations



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/15/2021

Project: Cherry Capital Airport Phase I ESA

Location: South Clear Zone

Project Number: 2021630002.01

Address: South Airport Road

Completed by: Peter Kallioinen

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Vacant runway clear zone</i>
Past Use of the Property	
Current Use of the Adjoining Property	<i>North is South Airport Road, south is vacant, east and west are residential and commercial</i>
Past Use of the Adjoining Property	<i>Same</i>
Current and Past Uses of Surrounding Area	<i>Residential, commercial, vacant</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>South half is wetlands</i>
General Description of Buildings and Improvements	<i>Undeveloped</i>

General Site Photographs



Description	<i>Detention basin at north end of area</i>
Viewing Location/Direction	<i>Looking northeast towards South Airport Road</i>



Description	<i>TC Rental bordering west side of clearance area</i>
Viewing Location/Direction	<i>Looking west</i>



Description	<i>Typical view east of site</i>
Viewing Location/Direction	<i>Looking southeast</i>



Description	<i>AST on neighboring property east of site</i>
Viewing Location/Direction	<i>Looking southeast from east property line near center</i>



Description	<i>Typical view of south half of site</i>
Viewing Location/Direction	<i>Looking south</i>



Description	<i>Typical view of north half of clearance zone</i>
Viewing Location/Direction	<i>Looking east</i>



Description	<i>Parking and storage on west side of area</i>
Viewing Location/Direction	<i>South of cul du sac</i>



Description	<i>Soil pile near cul du sac</i>
Viewing Location/Direction	<i>West side of clearance area looking southeast</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater Discharges	Yes	Detention basin on north side of site near South Airport Road. No contamination observed
Well (if yes, note type(s))	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	Yes	South half of site had thick vegetation and was not observed



Condition	Observed? (Yes/No)	Comments
Other exterior conditions observed	Yes	A business is using airport property for parking and storage along west property boundary. No hazardous materials observed. A business adjoining the property on the east has an AST near the property boundary. No evidence of contamination was observed.

Exterior Observation Photographs

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

Interior Observation Photographs

Other Notes or Observations

There are no structures on this portion of property.



Phase I ESA Site Reconnaissance

Client Name: NRAA

Date: 07/22/2021

Project: Cherry Capital Airport Phase I ESA

Location: West Clear Zone

Project Number: 2021630002.01

Address: Garfield Ave

Completed by: Max Korndorfer

City, State: Traverse City, MI

General Site Setting

Current Use of the Property	<i>Vacant clear zone</i>
Past Use of the Property	<i>Vacant clear zone</i>
Current Use of the Adjoining Property	<i>Airport, commercial properties, and residential</i>
Past Use of the Adjoining Property	<i>Airport, commercial properties and residential</i>
Current and Past Uses of Surrounding Area	<i>Airport, commercial properties, and residential</i>
Notable Geologic, Hydrologic, Topographic Characteristics of Property	<i>Flat, gravelly topsoil</i>
General Description of Buildings and Improvements	<i>Gravel drive down center</i>

General Site Photographs



Description	<i>Overall from center on Garfield Ave</i>
Viewing Location/Direction	<i>West</i>



Description	<i>Overall from west side center</i>
Viewing Location/Direction	<i>East</i>



Description	<i>Overall from south center</i>
Viewing Location/Direction	<i>North</i>



Description	<i>Overall from north center</i>
Viewing Location/Direction	<i>South</i>

Exterior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Potential PCB containing equipment	No	
Pits, Ponds, or Lagoons	No	
Stained Soil or Pavement	No	
Stressed Vegetation	No	
Solid Waste	No	
Wastewater and/or Stormwater	No	
Well (if yes, note type{s})	No	
Septic System	No	
Any limitations that inhibited ability to observe exterior conditions	No	



Condition	Observed? (Yes/No)	Comments
Other exterior conditions observed	No	

Exterior Observation Photographs

Interior Observations

Condition	Observed? (Yes/No)	Comments
Likely use, storage, treatment, or disposal of hazardous substances or petroleum products	No	
Storage Tanks (AST and/or UST)	No	
Drums and/or Containers (> 5 gallons)	No	
Odors – strong, pungent, or noxious	No	
Pools of Liquid	No	
Unidentified Substance Container(s)	No	
Potential PCB containing equipment	No	
Heating & Cooling System – note fuel source	No	
Stains and/or Corrosion	No	
Sumps and/or Pumps	No	
Any limitations that inhibited ability to observe interior conditions	No	
Other interior conditions observed	No	

Interior Observation Photographs

Other Notes or Observations

Attachment 4
User Questionnaire



USER QUESTIONNAIRE

Site Name:	Traverse City Airport
Site Address:	727 Fly Don't Drive
Site City/State:	Traverse City, Michigan
GCES Project No.:	2021630002.01

This questionnaire should be completed by the User of the Environmental Site Assessment Report in order to qualify for one of the Landowner Liability Protections offered by the Small Business Liability Relief and Brownfields Revitalization Act (as amended). The User should provide the following information to the environmental professional. Failure to conduct these inquiries could result in a determination that "all appropriate inquiries" is not complete.

QUESTION	USER Yes/No/Unknown
1. Are you aware of any environmental cleanup liens against the <i>property</i> that are filed or recorded under federal, tribal, state or local law?	No
2. Are you aware of any activity and use limitations (AULs), such as <i>engineering controls</i> , land use restrictions or <i>institutional controls</i> that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?	No
3. As a <i>user</i> of this <i>ESA</i> do you have any specialized knowledge or experience related to the <i>property</i> or nearby properties? For example, are you involved in the same line of business as the current or former <i>occupants</i> of the <i>property</i> or an adjoining <i>property</i> so that you would have specialized knowledge of the chemicals and processes used by this type of business?	Yes
4. Does the purchase price being paid for this <i>property</i> reasonably reflect the fair market value of the <i>property</i> ? If you conclude that there is a difference, have you considered whether the lower price is because contamination is known or believed to be present at the <i>property</i> ?	Yes
5a. Do you know the past uses of the <i>property</i> ?	Yes
5b. Do you know the specific chemicals that are present or once were present at the <i>property</i> ?	Yes
5c. Do you know of spills or other chemical releases that have taken place at the <i>property</i> ?	Yes
5d. Do you know of any environmental cleanups that have taken place at the <i>property</i> ?	Yes
6a. As the <i>user</i> of this <i>ESA</i> , based on your knowledge and experience related to the <i>property</i> , are there any <i>obvious</i> indicators that point to the presence or likely presence of contamination at the <i>property</i> ?	Yes

This Questionnaire Completed By:

Name:	Kevin C. Klein
Signature:	
Title:	Chief Executive Officer
Company:	Northwest Regional Airport Authority
Date:	8/10/2021

Attachment 5

EDR Environmental Database Search Report

Attachment 6
Aerial Photographs



TVC Airport

727 Fly Dont Dr

Traverse City, MI 49686

Inquiry Number: 6594990.1

July 29, 2021

The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

07/29/21

Site Name:

TVC Airport
727 Fly Dont Dr
Traverse City, MI 49686
EDR Inquiry # 6594990.1

Client Name:

Gosling Czubak
1280 Business Park Drive
Traverse City, MI 49686
Contact: Max Korndorfer



Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
1938	1"=1750'	Flight Date: July 18, 1938	USGS
1953	1"=1750'	Flight Date: June 24, 1953	USGS
1964	1"=1750'	Flight Date: June 20, 1964	USGS
1976	1"=1750'	Flight Date: May 09, 1976	USGS
1981	1"=1750'	Flight Date: November 14, 1981	USGS
1986	1"=1750'	Flight Date: May 29, 1986	USGS
1994	1"=1750'	Flight Date: May 17, 1994	USGS
1999	1"=1750'	Flight Date: April 28, 1999	USGS
2005	1"=1750'	Flight Date: June 20, 2005	USGS
2010	1"=1750'	Flight Date: July 14, 2010	USGS
2016	1"=1750'	Flight Date: July 25, 2016	USGS

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18-38

BDO-2-76



INQUIRY #: 6594990.1

YEAR: 1938

— = 1750'





INQUIRY #: 6594990.1

YEAR: 1953

— = 1750'



B00-500-52



INQUIRY #: 6594990.1

YEAR: 1964

— = 1750'



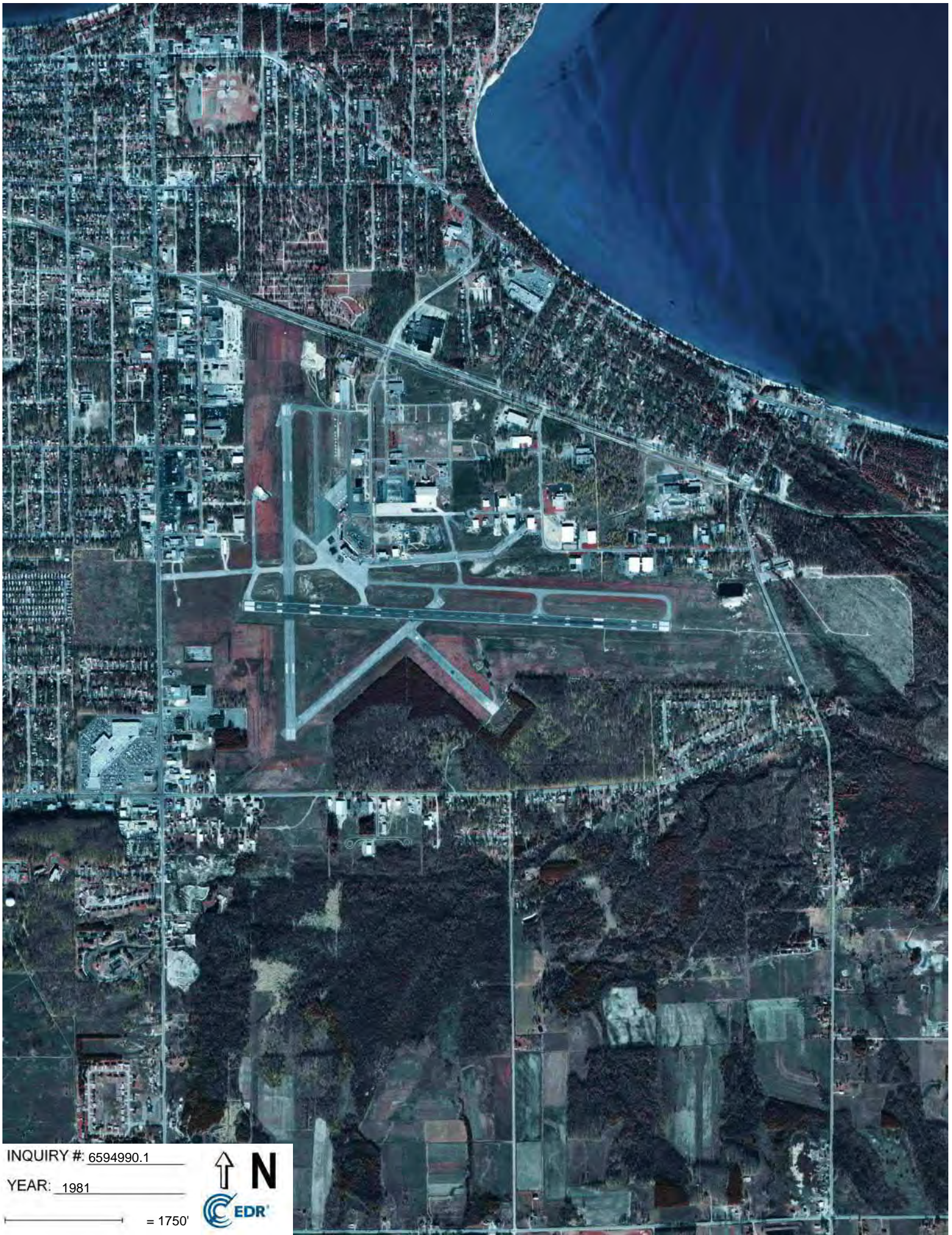


INQUIRY #: 6594990.1

YEAR: 1976

— = 1750'





INQUIRY #: 6594990.1

YEAR: 1981

— = 1750'





INQUIRY #: 6594990.1

YEAR: 1986

— = 1750'





INQUIRY #: 6594990.1

YEAR: 1994

— = 1750'





INQUIRY #: 6594990.1

YEAR: 1999



— = 1750'



INQUIRY #: 6594990.1

YEAR: 2005

— = 1750'





INQUIRY # 6594990.1

YEAR: 2010

— = 1750'





INQUIRY # 6594990.1

YEAR: 2016

— = 1750'



Attachment 7

Environmental Assessment Questionnaire / Owner Interview



ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE

Site Name:	Traverse City Airport
Site Address:	727 Fly Don't Drive
Site City/State:	Traverse City, Michigan
GCES Project No.:	2021630002.01

This questionnaire should be completed by the current owner of the property; any commercial occupant of the property (residential occupants do not need to be asked the questions); and any other occupant likely to be using, treating, generating, storing or disposing of hazardous substances or petroleum products on or from the property.

Answer all questions to the best of the respondent's actual knowledge and in good faith. All questions should be answered as indicated in the form. Preparer represents that to the best of his/her knowledge the statements and facts are true and correct and to the best of his/her actual knowledge no material facts have been suppressed or misstated.

The OWNER portion of the questionnaire was completed by:

Owner Name:	Northwestern Regional Airport Commission
Owner Signature	
Owner Phone Number:	231-947-2250
Date:	8/10/2021

The OCCUPANT portion of the questionnaire was completed by:

Occupant Name:	
Occupant Signature	
Occupant Phone Number:	
Date:	

The SITE VISIT portion of the questionnaire was completed by:

Name:	
Title:	
Firm:	Gosling Czubak Engineering Sciences, Inc.
Phone Number:	231-946-9191
Date:	
Relationship to Site:	Consultant
Relationship to User:	Consultant

	QUESTION	OWNER	OCCUPANT	OBSERVED DURING SITE VISIT
1.	<u>Is the property</u> or any adjoining property used for an industrial use?	Yes <input checked="" type="checkbox"/> No _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____

**** Provide an explanation in the Comments Section for all questions answered YES****



ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE

QUESTION	OWNER	OCCUPANT	OBSERVED DURING SITE VISIT
2. To the best of your knowledge, <u>has the property</u> or any adjoining property been used for an industrial use in the past?	Yes <input checked="" type="checkbox"/> _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
3. Is the <u>property</u> or any adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?	Yes <input checked="" type="checkbox"/> _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
4. To the best of your knowledge <u>has the property</u> or any adjoining property been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?	Yes <input checked="" type="checkbox"/> _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
5. Are there currently, or to the best of your knowledge have there been previously, any damaged or discarded automobile or industrial batteries, or pesticides, paints, or other chemicals in individual containers of greater than 5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the <i>property</i> or at the facility?	Yes _____ No <input checked="" type="checkbox"/> _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
6. Are there currently, or to the best of your knowledge have there been previously, any industrial <i>drums</i> (typically 55 gal [208 L]) or sacks of chemicals located on the property or at the facility?	Yes <input checked="" type="checkbox"/> _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
7. Has <i>fill dirt</i> been brought onto the property that originated from a contaminated site or that is of an unknown origin?	Yes _____ No <input checked="" type="checkbox"/> _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____

**** Provide an explanation in the Comments Section for all questions answered YES****



ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE

QUESTION	OWNER	OCCUPANT	OBSERVED DURING SITE VISIT
8. Are there currently, or to the best of your knowledge have there been previously, any <i>pits, ponds, or lagoons</i> located on the <i>property</i> in connection with waste treatment or waste disposal?	Yes _____ No <u> X </u> _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
9. Is there currently, or to the best of your knowledge have there been previously, any stained soil on the <i>property</i> ?	Yes _____ No <u> X </u> _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
10. Are there currently, or to the best of your knowledge have there been previously, any registered or unregistered storage tanks (above or underground) located on the <i>property</i> ?	Yes <u> X </u> _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
11. Are there currently, or to the best of your knowledge have there been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the <i>property</i> adjacent to any structure located on the <i>property</i> ?	Yes _____ No <u> X </u> _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
12. Are there currently, or to the best of your knowledge have there been previously, any flooring, drains, or walls located within the facility that are stained by substances other than water or are emitting foul odors?	Yes _____ No <u> X </u> _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
13. If the <i>property</i> is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system or has the well been designated contaminated by any government environmental/health agency?	Yes _____ No _____ Unknown _____ N/A <u> X </u> _____	Yes _____ No _____ Unknown _____ N/A _____	Yes _____ No _____ Unknown _____ N/A _____

**** Provide an explanation in the Comments Section for all questions answered YES****



ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE

QUESTION	OWNER	OCCUPANT	OBSERVED DURING SITE VISIT
14. Does the <i>owner</i> or <i>occupant</i> of the <i>property</i> have any knowledge of <i>environmental liens</i> or governmental notification relating to the past or recurrent violations of environmental laws with respect to the <i>property</i> or any facility located on the <i>property</i> ?	Yes _____ No <u> X </u> _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
15. Has the <i>owner</i> or <i>occupant</i> of the <i>property</i> been informed of the past or current existence of <i>hazardous substances</i> or <i>petroleum products</i> or environmental violations with respect to the <i>property</i> or any facility located on the <i>property</i> ?	Yes <u> X </u> _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
16. Does the <i>owner</i> or <i>occupant</i> of the <i>property</i> have any knowledge of any environmental site assessment of the <i>property</i> or facility that indicated the presence of <i>hazardous substances</i> or <i>petroleum products</i> on, or contamination of the <i>property</i> , or recommend further assessment of the <i>property</i> ?	Yes <u> X </u> _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
17. Does the <i>owner</i> or <i>occupant</i> of the <i>property</i> know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any <i>hazardous substance</i> or <i>petroleum products</i> involving the <i>property</i> by any owner or occupant of the <i>property</i> ?	Yes _____ No <u> X </u> _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
18. Does the <i>property</i> discharge wastewater on or adjacent to the <i>property</i> , other than stormwater into a sanitary sewer system?	Yes _____ No <u> X </u> _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____

**** Provide an explanation in the Comments Section for all questions answered YES****



ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE

QUESTION	OWNER	OCCUPANT	OBSERVED DURING SITE VISIT
19. To the best of your knowledge, have any <i>hazardous substances</i> or <i>petroleum products</i> , unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the <i>property</i> ?	Yes _____ No <u> X </u> _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____
20. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCB's on the <i>property</i> ?	Yes _____ No <u> X </u> _____ Unknown _____	Yes _____ No _____ Unknown _____	Yes _____ No _____ Unknown _____

Comments:

See Attached

**** Provide an explanation in the Comments Section for all questions answered YES****

Gosling/Czubak ESA – Yes Responses as OWNER of Property

- Q1: The property in question is currently adjoined by various businesses that conduct manufacturing operations.
- Q2: The property in question has previously been adjoined by various businesses that conduct manufacturing operations.
- Q3: Costco (gas station); Aircraft motor repair both on property and adjoining.
- Q4: Costco (gas station); Aircraft motor repair both on property and adjoining.
- Q6: 55-gallon drums of aqueous film-forming foam (AFFF) are stored on the airport premises.
- Q10: Currently, there are (6) individual above ground fuel tanks located on the property, as follows:
- (1) 6,000 Gal Unleaded – Car Rental
 - (1) 1,000 Gal Unleaded – SRE Facility
 - (1) 3,000 Gal Diesel – SRE Facility
 - (3) fuel facilities maintained by FBO – (1) Storage and (2) Fuel Farms on north side of airport property

The 6,000 gallon car rental fuel tank was previously located at the old car rental space on the north side of the Airport property. This tank was relocated adjacent to the car wash facility currently on the property's south side.

In addition, former tenant Harbour Air operated a fuel farm consisting of (3) UST's north of their property located at 1100 Airport Access (now Air Services, Inc.). (2) of these USTs were removed, while the third was left underground and filled with pea gravel.

- Q15: Recent environmental testing of ground water has provided indications that various PFAS chemicals are evident on the property. PFAS chemicals are found in AFFF, which is mandated by the FAA for use in fighting petroleum-based fires at aviation facilities.
- Q16: See Q15 response