

**Bowers Harbor Land Company Property
0 Devils Dive Road & 0 Bowers Harbor Road
Parcel Identification Nos.: 28-11-128-025-00 & 28-11-128-006-00
Peninsula Township, Grand Traverse County, Michigan**

**SECTION 7A COMPLIANCE ANALYSIS
Conducted Pursuant to Section 20126(1)(c) of Part 201,
1994 Public Act 451, as amended**

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SECTION 7A COMPLIANCE ANALYSIS
Conducted Pursuant to Section 20126(1)(c) of Part 201,
1994 Public Act 451 as amended

1.0 SECTION 20107(a) COMPLIANCE ANALYSIS

Otwell Mawby, P.C. (Otwell Mawby) has prepared this Section 20107(a) compliance "Due Care" analysis for the Bowers Harbor Land Company Property comprised of two parcels located at 0 Devils Dive Road and 0 Bowers Harbor Road in Peninsula Township, in Grand Traverse County, Michigan (the subject property). A BEA entitled "Bowers Harbor Land Company Property, 0 Devils Dive Road and 0 Bowers Harbor Road, Peninsula Township, Grand Traverse County, Michigan," has been completed by Otwell Mawby. The purpose of this document is to provide a Section 20107a Compliance Analysis, which is considered a supplement to the BEA. The following sections present the Section 20107(a) compliance "Due Care" analysis for the subject property.

1.1 DETAILED CHARACTERISTICS OF PROPERTY USE

The subject property consists of two undeveloped parcels of property containing approximately 58.98 acres located in Section 28, Township 29 North, Range 10 West. The subject property is undeveloped and consists of vacant field, scrub brush, and woodlands. Tax assessment records indicate the subject property is located at 0 Devils Dive Road with Parcel Identification Number 28-11-128-025-00 and 0 Bowers Harbor Road with Parcel Identification Number 28-11-128-006-00. Both parcels are owned by the Bowers Harbor Land Company.

Based on review of available information during the completion of Otwell Mawby's March 2013 Phase I ESA of the subject property, its use between the early 1900's and the early 2000's was determined to be for agricultural purposes. Prior to the 1940's the subject property is believed to have been planted as apple orchard. During the 1940's the apple trees were replaced with tart cherry trees, which remained on the subject property until the early 2000's. In the early 2000's the trees were removed from the site and it has since remained vacant. In 2004 the subject property was purchased by the current owner with the intention to develop the site into a residential subdivision but the development was never started and the site remains vacant. Prior to the purchase of the subject property, environmental assessment of the site was completed, which deemed the property a "facility" as defined by Part 201 of Act 451 of 1994, as amended, and a Baseline Environmental Assessment was completed on the subject property on behalf of the current owner. At the time the site reconnaissance was completed on February 13, 2013, the subject property was vacant and consisted mainly of vacant field, scrub brush vegetation, and woodland areas. A two track road was present extending through the subject property.

Peninsula Township intends to acquire the subject property and utilize it as an addition to their existing Bowers Harbor Township Park to the north. Reuse activities on the subject property will consist of light recreational/open space use: Details of the development of the new park property have not been determined at the time of this report. Currently, plans are to access the property

from the existing park to the north and utilize the existing parking, potable water supplies, and bathroom facilities. Future development activities on the property include potential development of recreational trails, a dog park, and construction of parking and drive areas, and a picnic pavilion. Athletic fields may also be developed/ constructed on the subject property. As details and specifics of these potential activities become available, an environmental construction management plan will be prepared to address these potential future development activities.

The subject property is not developed and there are currently no future plans for the development of any permanent structures. The subject property will be maintained with existing ground cover. Existing trails may be improved and made more durable with surfacing materials (i.e., crushed aggregate, wood mulch/chips) and maintained. At this time, there will be no modifications to the water flow pathways for runoff as part of the future use activities. Potential future development of a parking area/ driveway, picnic pavilion, and/ or athletic fields on the subject property will take into consideration the runoff from the impervious surface, potential exposure and exacerbation issues, and will be addressed by an environmental construction management plan.

1.2 HAZARDOUS SUBSTANCE INFORMATION

The subject property will remain relatively undeveloped for use by the new owner as a recreational/open space. Arsenic has been found at the subject property in excess of MDEQ GRCC, likely related to the historical use of the subject property as orchard. In 2003 lead was also identified in near surface soils at the subject property but concentrations were not found in excess of MDEQ GRCC but several concentrations were found in excess of statewide default background level (21,000 ug/Kg, ppb). While the lead concentrations do not exceed MDEQ GRCC, the exceedence of the statewide default background level indicates the lead is not naturally-occurring and, like the arsenic, is likely the result of historical agrochemical use on the property. The sampling and laboratory analytical results from the investigation conducted in 2003 and those completed in February 2013 have determined the subject property to be classified as a "facility" as defined by Part 201 of Act 451 of 1994, as amended. The "facility" status is the result of arsenic concentrations found at levels in excess of MDEQ GRCC. Two BEAS have been completed for the subject property as a result of the identified arsenic impacts in site soils. The current and historical site investigation activities that were documented in the aforementioned BEAs are summarized in the following sections.

Refer to Figure 2, for the sample locations and the tables on the following pages for a summary of GRCC exceedences. Laboratory analytical results are provided as Appendix A.

1.2.1 Initial Phase II ESA Investigation – May 2004

Otwell Mawby had previously conducted Phase II Environmental Site Assessment activities on the subject property in May 2004, to address the identified REC related to the use of agrochemicals on the site. These activities were completed for the potential sale and redevelopment of the subject property. As part of the investigation twenty five soil samples (identified as HA-1 through HA-25) were obtained over a grid pattern to determine potential impacts from agrochemical use. The soil samples were collected from near surface soils located just below the vegetative root line. The soil samples were collected for laboratory analysis of arsenic and lead content. Five soil samples were also composited from the original 25 samples and were analyzed by the laboratory for organo-chlorine and organo-phosphorus content. Results of the laboratory analysis are summarized in the table on the following page:

Boring ID	Arsenic Concentration (ug/Kg)	Lead Concentration (ug/Kg)	Constituent & GRCC Exceeded (ug/Kg)
HA-1	2,600	5,600	None
HA-2	9,200	59,000	Arsenic - SDBL, DC
HA-3	6,800	76,000	Arsenic - SDBL
HA-4	9,500	60,000	Arsenic - SDBL, DC
HA-5	8,800	58,000	Arsenic - SDBL, DC
HA-6	14,000	80,000	Arsenic - SDBL, DC
HA-7	7,900	70,000	Arsenic - SDBL, DC
HA-8	9,200	70,000	Arsenic - SDBL, DC
HA-9	7,400	52,000	Arsenic - SDBL
HA-10	12,000	58,000	Arsenic - SDBL, DC
HA-11	11,000	53,000	Arsenic - SDBL, DC
HA-12	7,900	66,000	Arsenic - SDBL, DC
HA-13	1,200	8,500	None
HA-14	1,900	11,000	None
HA-15	7,200	42,000	Arsenic - SDBL
HA-16	6,300	30,000	Arsenic - SDBL
HA-17	2,000	10,000	None
HA-18	3,800	14,000	None
HA-19	5,900	25,000	Arsenic - SDBL
HA-20	1,900	7,800	None
HA-21	1,200	5,400	None
HA-22	1,600	7,200	None
HA-23	3,400	25,000	None
HA-24	7,500	9,800	Arsenic - SDBL
HA-25	6,100	32,000	Arsenic - SDBL

DWP – MDEQ Part 201 Drinking Water Protection
 DC – MDEQ Part 201 Direct Contact Criteria
 SDBL – MDEQ State Default Background Level
 GRCC – Generic Residential Cleanup Criteria
 ug/Kg – Micrograms per kilogram (i.e., parts per billion)

None of the soil samples contained concentrations of lead, organo-chlorine or organo-phosphorus at concentrations in excess of MDEQ GRCC. These soil borings locations are shown on Figure 2 (attached). Based on the presence of arsenic at concentrations in excess of MDEQ GRCC the subject property was determined to meet the definition of a "facility" as defined by Part 201 of Act 451 of 1994, as amended, and a subsequent BEA was submitted to the MDEQ on behalf of

the current owners of the subject property. The BEA was affirmed by the MDEQ in a letter dated, November 1, 2004, signed by the Remediation and Redevelopment Division, District Supervisor, John Alford.

The soil GRCC exceedences were found at a depth of approximately one half foot below the ground surface, and are likely attributable to historic agrochemical applications at the subject property. Refer to Figure 2, Sample Location Map, September 2003 and February 2013 for the sample locations. The complete analytical data package is included in Appendix A.

While the lead concentrations do not exceed MDEQ GRCC, the exceedence of the statewide default background level (21,000 ug/Kg, ppb) indicates the lead concentrations, like the arsenic, are likely the result of historical agrochemical use on the property. As the detected concentrations of lead, organo-chlorine and organo-phosphorus pesticides are well below MDEQ criteria, no additional investigation is warranted.

1.2.2 Phase II ESA – February 2013

On February 13, 2013 Otwell Mawby completed an additional 20 soil borings (HA-26 through HA-45) on the subject property to further evaluate the arsenic impact. The soil samples were collected from near surface soils located just below the vegetative root line. The soil samples were collected for laboratory analysis of arsenic.

Each of the discrete soil samples (HA-26 through HA-45) collected at the subject property exhibited concentrations of arsenic above its laboratory detection limit. Eleven of the samples contained concentrations of arsenic above MDEQ GRCC, specifically, Drinking Water Protection and Direct Contact Criteria. Concentrations detected above MDEQ GRCC are summarized below.

Summary of Soil Concentrations Above GRCC

Parameter Exceeding Criteria	Sample Type	Parameter Analytical Result (ug/Kg)	GRCC Exceeded (ug/Kg)	Boring ID	Sample Depth (ft.)
Arsenic	Soil	10,000	SDBL, DWP, GSI, DC	HA-27	0.5'
Arsenic	Soil	11,000	SDBL, DWP, GSI, DC	HA-28	0.5'
DWP – MDEQ Part 201 Drinking Water Protection DC – MDEQ Part 201 Direct Contact Criteria GSI – Groundwater Surface Water Interface Criteria SDBL – MDEQ State Default Background Level GRCC – Generic Residential Cleanup Criteria ug/Kg – Micrograms per kilogram (i.e., parts per billion)					

Continued from Previous Page:

Parameter Exceeding Criteria	Sample Type	Parameter Analytical Result (ug/Kg)	GRCC Exceeded (ug/Kg)	Boring ID	Sample Depth (ft.)
Arsenic	Soil	15,000	SDBL, DWP, GSI, DC	HA-29	0.5'
Arsenic	Soil	22,000	SDBL, DWP, GSI, DC	HA-30	0.5'
Arsenic	Soil	6,100	SDBL, DWP, GSI	HA-31	0.5'
Arsenic	Soil	8,500	SDBL, DWP, GSI, DC	HA-32	0.5'
Arsenic	Soil	12,000	SDBL, DWP, GSI, DC	HA-33	0.5'
Arsenic	Soil	10,000	SDBL, DWP, GSI, DC	HA-34	0.5'
Arsenic	Soil	11,000	SDBL, DWP, GSI, DC	HA-35	0.5'
Arsenic	Soil	6,400	SDBL, DWP, GSI	HA-37	0.5'
Arsenic	Soil	11,000	SDBL, DWP, GSI, DC	HA-40	0.5'
DWP – MDEQ Part 201 Drinking Water Protection DC – MDEQ Part 201 Direct Contact Criteria GSI – MDEQ Part 201 Ground Water Surface Water Interface Criteria SDBL – MDEQ State Default Background Level GRCC – Generic Residential Cleanup Criteria ug/Kg – Micrograms per kilogram (i.e., parts per billion)					

Each of the remaining soil samples contained concentrations of arsenic at concentrations in excess of their respective laboratory detection limits but each was below MDEQ GRCC. The complete analytical data package is included in Appendix A. The sampling locations are depicted on Figure 2.

1.3 POTENTIAL HAZARDOUS SUBSTANCE EXPOSURE PATHWAYS

The proposed future use of the subject property consists of recreational/open space uses. Evaluation of potential exposure pathways identified that one pathway maybe complete. Based on the exceedances of MDEQ GRCC, the applicable potential hazardous exposure pathways for the subject property are: 1) Drinking Water Protection, 2) Groundwater Surface Water Interface Protection Criteria, 3) Direct Contact Criteria, and 4) Particulate Soil Inhalation Criteria.

The subject property is currently undeveloped with no associated infrastructure. The proposed future use of the property will be for recreational uses only. Any additional future activities (i.e., pathway renovation/ construction, and parking lot, pavilion, dog park, and athletic field construction on the site will first be evaluated by a qualified environmental professional with regard to potential exposure or exacerbation issues prior to being implemented. The following sections address potential exposure pathways.

1.3.1 Drinking Water Protection Criteria (DWP)

Analytical results identified arsenic in soil samples at concentrations in excess of the MDEQ Part 201 Drinking Water Protection Criteria. REC's identified for the property also indicate potential impact to the site from the historic Township land use to the southeast and an area wide concern of impact to the aquifer with nitrates. Future use of the property for recreational use does not include the use of the aquifer as a potable water supply and thus this pathway is not complete. If future use should consider a potable water supply on this property, additional assessment is recommended.

1.3.2 Groundwater/Surface Water Interface Protection Criteria (GSI)

Analytical results did identify arsenic in several 27 soil sample at concentrations in excess of the MDEQ GRCC protective of the GSI at the subject property. Although there is an exceedence of the GSI in soil, there are no surface water bodies on the subject property and the closest surface water body is West Grand Traverse Bay, which is located approximately 530 feet to the west of the subject property. Arsenic is immobile in the soil column and not likely to leach to groundwater. Given the distance to West Grand Traverse Bay and the characteristics of arsenic in the soil column, we assess the potential for GSI impact to West Grand Traverse Bay as low and conclude that the soil groundwater/surface water interface is not a complete exposure pathway at the subject property.

1.3.3 Particulate Soil Inhalation Criteria

Analytical results did not identify arsenic in any of the samples in excess of the MDEQ GRCC protective of the Particulate Soil Inhalation Criteria (720,000 ppb) at the subject property. Therefore, the particulate soil inhalation criteria is not a complete exposure pathway at the subject property.

1.3.4 Direct Contact Criteria (DCC)

Analytical results identified arsenic in the 18 samples collected from the subject property at concentrations in excess of the MDEQ Part 201 Generic Residential Direct Contact Criteria (DCC). The arsenic results obtained from soil samples on the site were compared to Generic Residential DCC. This generic criterion is developed based upon very conservative dermal and ingestion exposure assumptions, which are predicted upon residential use on the site. These use scenarios and exposure assumptions are not appropriate for the proposed light recreational use of the site. Although there are exceedences of the DCC in soil, significant direct contact with the impacted soils is not likely given the proposed recreational use and the existing vegetative cover.

The proposed future use of the subject property will be limited to recreational activities. The activities anticipated to take place on the property might include walking, hiking, jogging, biking, skiing, snowshoeing and other light outdoor recreational activities. Future activities may include the presence of a dog park, a picnic pavilion, recreational fields and activities such as baseball, soccer, rugby, etc. These activities will likely result in short durations of time being spent on the subject property. The use of the subject property will specifically prohibit the use of motorized vehicles (i.e., motorcycles, snowmobiles, and other types of ATVs, etc.) to prevent topsoil disturbance and increase potential for erosion. The general population anticipated to utilize the

site would primarily include residents of the Peninsula Township and the City of Traverse City as well as surrounding populations located in Grand Traverse County, and out of area tourists.

To demonstrate that no direct contact exposure issues with regard to the proposed recreational use will exist on the subject property a site specific direct contact concentration for arsenic was developed for the site. The site-specific value was developed using the algorithm equation for carcinogens utilized for the development of the Generic Residential and Commercial I Direct Contact Criteria in soil. The equation is as follows, and can be referenced with a more complete description under the MDEQ Part 201 rules, Remediation and Redevelopment Division (RRD) Operational Memorandum Number 1, Technical Support Document – Attachment 6, Part 201 Soil Direct Contact Criteria, Tier I Soil Direct Contact Risk-Based Screening Levels, developed under R 299.5720.

$$DCC = \frac{TR \times AT \times CF}{SF \times [(EF_i \times IF \times AE_i) + (EF_d \times DF \times AE_d)]}$$

Where,

DCC	(Direct Contact Criterion)	=	chemical-specific, ug/kg or ppb
TR	(Target risk level)	=	1.0 ⁻⁵
AT	(Averaging time)	=	25,550 days (70 yrs x 365 days/yr)
CF	(Conversion Factor)	=	1x10 ⁹ or 1E+9
SF	(Oral cancer slope factor)	=	chemical – specific 1.5E+0 for Arsenic
EF _i	(Ingestion exposure frequency)	=	350 days/year
IF	(Age-adjusted soil ingestion factor)	=	114 mg-year/kg-day
AE _i	(Ingestion absorption efficiency)	=	chemical – specific 0.5 for Arsenic
EF _d	(Dermal exposure frequency)	=	245 days/year
DF	(Age-adjusted soil dermal factor)	=	353 days/year
AE _d	(Dermal absorption efficiency)	=	chemical – specific 0.03 for Arsenic

The Site Specific Criteria was developed by modifying two factors of the algorithm for Residential Criteria to make the equation more applicable to a recreational usage scenario. The two factors were the Ingestion Exposure Frequency (EF_i) and Dermal Exposure Frequency (EF_d). The values for each of these frequencies (EF_i = 350 days per year, and EF_d = 245 days per year) utilized in the algorithm were developed for a residential scenario with a residence located on the same property where the exposures would be expected to occur. The algorithm does not account for any protective cover on the soil preventing contact such as vegetation. The dermal exposure frequency (245 days per year) takes into account snow cover and days when the soils are frozen. The ingestion exposure frequency (350 days per year) takes into account the dermal exposure days plus potential ingestion of soils that may have been "tracked" into the home or dwelling.

A modified value was calculated for each of these exposure frequencies based upon the following: 1) the intended future use of the subject property does not include any areas of permanent residence so the potential residential ingestion exposure would be at a greatly diminished frequency, and 2) the proposed future use of the subject property is for recreational purposes so dermal exposure frequencies would be much lower than those anticipated in a residential setting.

As the subject property is going to be utilized for short duration recreational activities (walking, biking, skiing, etc.) values of 140 days per year were utilized for both the dermal exposure frequency and ingestion exposure frequency. The 140 days per year value equates to approximately 4 days per week for 35 weeks, during the months of April through October, for exposure to soils on the subject property. Utilizing the 140-day exposure period, a value of approximately 18 ppm was generated for an allowable site specific Direct Contact Criteria for Arsenic.

Once the site-specific direct contact number was established, Otwell Mawby completed a statistical analysis of the laboratory data. The statistical analysis of the arsenic data was completed by following the Environmental Protection Agency (EPA), Supplemental Guidance to Risk Assessment Guidance for Superfund (RAGS): Calculating the Concentration Term to determine the 95 percent upper confidence limit (95% UCL). The 95% UCL is defined as a value that, when calculated repeatedly for randomly drawn subsets of site data, equals or exceeds the true mean 95 percent of the time.

The analytical results (data sets) were evaluated and the site was divided into two areas based upon a predominance of arsenic results. 17 samples out of 25 on the west half of the site and one sample out of 20 on the east half of the site exceeded GRCC DCC for arsenic. 95% UCLs were calculated for three data sets; 1) the entire site, 2) the western portion of the subject property, and 3) the eastern portion of the subject property. The purpose of the calculations was for comparison to the site specific Direct Contact Criteria. Refer to Figure 2 for the soil sampling locations. The following table summarizes the details of the 95% UCL calculations:

Area of the Site	Samples Included in Calculation	Calculated 95% UCL (mg/Kg)
Entire Site	HA-1 through HA-45	9.4
Western Portion	HA-1 through HA-14 & HA-26 through HA-36	13.3
Eastern Portion	HA-15 through HA-25 & HA-37 through HA-45	5.9

The calculated 95% UCL for the entire site and the western portion of the subject property shows exceedences of the Direct Contact Criteria. The 95% UCL that was calculated for the eastern portion of the subject property did not exceed the Direct Contact Criteria. Steps to be taken to mitigate the unacceptable exposure of all areas with Direct Contact Exceedences are discussed in the following section.

2.0 PLAN FOR RESPONSE ACTIVITIES

Based upon the evaluation of contamination at the subject property, the following sections provided the response activities that are planned for the subject property.

2.1 RESPONSE ACTIVITIES

The site-specific direct contact criterion for arsenic successfully mitigates the potential for unacceptable exposure to arsenic during the proposed future open space/light recreational activities. The potential for exposure to arsenic is further reduced as exposure to the arsenic impacted soil will not occur on a regular basis during the use of the subject property for recreational activities (i.e., walking, hiking, jogging, biking, skiing, snow shoeing, baseball, soccer, etc). The potential for dermal contact with arsenic impacted soil is further reduced as the subject property areas will be maintained with vegetative cover to limit contact with contaminated soils and provide soil stabilization against erosion. Additional response activities planned or required for the proposed recreational uses are discussed in the following paragraphs.

The west property boundary and the west half of the northern property boundary are abutted by residential properties. Based on the presence of these residential properties it is conceivable that occupants of the residences could use the subject property more frequently than other recreational users of the site that live remote from the site. In other words adjacent residences could potentially use the subject property as an extension of their backyards. To mitigate any increase in access to the site due to the close proximity of the residences, vegetative fence lines (hedge rows) will be installed and allowed to generate along the property boundaries that abut residential home sites. This vegetative barrier will provide separation between the adjacent residences and the subject property. The subject property will be managed to encourage the existing vegetative growth along the property boundaries that abut residential home sites. This separation hedge row will not be required around the perimeter of the east portion of the site as the 95% UCL does not exceed GRCC DCC. The vegetation hedge row will also not be required along Devils Dive Road.

The hedgerow will consist of the planting of various vegetation types (i.e., raspberry, blackberry, rose, or yew). Once the planted vegetation has become established it will provide a thick, brushy barrier to discourage and mitigate use of the site as an extension of the adjacent backyard. Initial planting for the hedgerow barrier will be following site acquisition and will be supplemented in the future as needed. Semi-annual inspections of these areas will be completed to verify the establishment and maintenance of the vegetative cover and to ensure their integrity. The integrity of the hedgerow barrier proposed will be inspected and repaired if necessary. If any areas of wear are noticed, increased inspection of these areas will be completed and if necessary, steps will be taken to prevent additional wear. The location of the proposed barriers (hedgerows) is depicted on Figure 3.

If future development of athletic fields is proposed, the development plan will be reviewed by a qualified environmental consultant. Additional characterization of site soils may be required.

Prior to development an Environmental Construction Management Plan will be completed by a qualified Environmental Professional to ensure safe construction.

2.2 DUE CARE RESPONSE ACTIVITIES

Planned onsite redevelopment activities will include hedgerow establishment.

Contractors and any site workers will be advised as to the nature and location of contaminated soil on the subject property and the measures necessary to protect themselves from unacceptable exposure to the material. A review of proper personal protective equipment and soil management options will be completed prior to implementation of any activities that present the potential for exposure to the contamination present at the site.

2.2.1 Hedgerow Establishment

Residential properties are located along the western and northern boundaries of the subject property. It is possible that these residences could use the subject property more frequently and as an extension of their backyards. To limit the use of the subject property as an extension of the backyard hedgerow will be used as previously discussed.

During the planting vegetation for the hedgerow, only limited, short duration exposures are anticipated for this activity. These exposures will be further mitigated by use of protective clothing (gloves and boots), simple decontamination procedures and safety education to workers.

Any areas of exposed underlying soil materials disturbed during the development activities will be backfilled with clean topsoil, allowing the establishment of native vegetation. During the development activities precautions will be taken to assure that no exacerbation or unacceptable exposures may result as described in Section 2.4.

2.3 FUTURE DUE CARE RESPONSE ACTIVITIES

Proposed future activities for the subject property may include improvement or development of trails, a dog park, and potential construction of a parking areas, a picnic pavilion, and athletic fields. Specific detail of improvements are not known at this time.

2.3.1 Trail Improvement and Construction

Existing trails may be improved, made more durable with surfacing materials (i.e., crushed aggregate, wood mulch/chips) and new trails will be constructed. During the improvement of existing trails or development of new trails, care will be taken to limit disturbance to the underlying soil materials. If contact with the arsenic impacted soils is made, exposure potential

will be mitigated as presented in Section 2.2. If extensive grading or earthwork activities are planned, a project-specific construction management plan will be developed.

2.3.2 Parking Area and Picnic Pavilion

The potential for the establishment of a parking area and a picnic pavilion could take place on the subject property. Development of a parking lot and/or a picnic pavilion will require the grading of existing soil material. Due to the more intensive invasive activities associated with the development of a parking area or picnic pavilion a project-specific construction management plan will be developed when plans are developed.

2.3.3 Athletic Fields and Dog Park

The potential for development of athletic fields or a dog park on the subject property may require the grading of existing soil material. As the specific location of these areas is not known additional delineation of proposed athletic fields or a dog park could be required dependent upon the location of the fields and specific development plan. Prior to development of any athletic field or a dog park on the subject property, plans would be reviewed by a qualified Environmental Professional and policies put in place to prevent a potential exposure hazard, if deemed necessary. Due to the more intensive invasive activities associated with the development of athletic fields and/ or a dog park, a project-specific construction management plan will be developed when plans are developed.

2.4 EXPOSURE RESPONSE ACTIVITIES

Prior to initiation of the proposed improvement activities on the subject property relating to the planting of hedgerows, site workers and contractors will be advised as to the nature and extent of the impact and measures necessary for protection from unacceptable exposures.

2.4.1 Hedgerows

Prior to hedgerow construction education and training sessions for workers will be conducted at an onsite meeting to discuss the planting of hedgerow vegetation.

Exposure to arsenic impacted soils during the completion of these activities is expected to be low due to the limited disturbance of the soil. However, protective clothing should be used during the completion of these tasks. To minimize exposure to the contamination during the hedgerow construction activities taking place on the subject property, in areas with direct contact exceedences, the following precautions shall be taken:

- **Direct Contact with Soils:** Site workers shall minimize direct dermal contact with soil at the site via the use of gloves and work clothing to minimize exposed skin area.

Exposed skin should be washed thoroughly with soap and water as soon as possible after exposure. Gloves and work clothing should be brushed clean prior to leaving the site each day, and should be laundered separate from other clothing before being worn again.

- **Ingestion of Contaminated Soil:** Site workers and others shall be prohibited from eating, drinking and smoking at the site to prevent the ingestion of arsenic impacted soil materials. The use of gloves and work clothing to minimize exposed skin area, dust masks, and washing thoroughly with soap and water as soon as possible after exposure will also help to mitigate the ingestion of soil materials.
- **Inhalation of Contaminated Soil:** Levels of arsenic identified in the soils of the subject property (previously identified above) are well below the MDEQ GRCC for the Particulate Soil Inhalation Criteria. Hedgerow construction is not anticipated to result in significant dust generation. To further minimize exposure to the contamination during activities taking place on the subject property, the use of dust masks can be implemented and will help to prevent the inhalation of soil materials.
- **Dust Control:** Dust control procedures, such as wetting of exposed soils, can also be instituted to ensure contaminated soils do not become airborne or otherwise leave the site. This will further limit the potential for the ingestion/inhalation of impacted soil materials while completing the onsite activities.

Care should also be taken to prevent any damage to the protective topsoil cover in the areas of the hedgerow planting.

3.0 EVALUATION AND DEMONSTRATION OF COMPLIANCE WITH SECTION 7A OBLIGATIONS

The following sections present the evaluation of exacerbation, due care, and responsible precautions for third parties. Prior to any future use, other than the described recreational use or improvements presented in this plan, a construction management plan will be prepared as detailed in Section 2.0.

3.1 EXACERBATION

The future owner of the subject property, Peninsula Township, must ensure that activities at the subject property do not exacerbate the existing soil contamination. Exacerbation is defined as any activity that could cause the contamination to spread or be made worse, as well as any activity that would increase the costs of addressing said contamination. While exacerbation of the contamination is unlikely given the nature of the impacts to the subject property and planned future use of the property, it is possible should future site activities involve any excavation. Prior to any future use of the property other than described in this plan, review of the proposed activity should be completed by an environmental professional, and a construction management plan prepared if required.

Contaminated Soil: Construction activities may require excavation and grading of soils that are contaminated above the site specific direct contact number and the MDEQ GRCC. Accordingly, soil excavated from the subject property shall only be placed in the immediate area from which it was excavated; it shall not be used as fill at other areas of the subject property or at any other site. Any disturbed soils exposed during redevelopment activities (i.e. parking lot or pavilion development or trail improvements) shall be stabilized with seed and mulch.

3.2 DUE CARE

Potential unacceptable exposure to contaminated soil at the subject property has been mitigated by the development of a site-specific direct contact criteria and barrier placement as further described in Section 2.0. If impacted soil is to be encountered during future site use activities, these activities will be reviewed by an environmental professional with appropriate measures implemented to ensure such activities do not exacerbate the impacted areas or allow for unacceptable exposure to occur. Future activities at the subject property (other than those discussed in this plan) that may require subsurface disturbance and/or exposure to contaminated soil, will be clearly defined and reviewed by an environmental professional for potential exacerbation and exposure issues and to determine if additional due care procedures should be implemented.

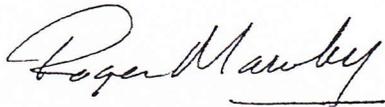
3.3 REASONABLE PRECAUTIONS FOR A THIRD PARTY

For third parties, people who would access the subject property for utility work or construction, the likelihood of long term repetitive exposure to contaminated soil is remote. Potential exposures will be communicated to third parties via the property owner, including advising contractors and easement holders of the nature of the contamination. A "no digging, grading, drilling or tilling" policy without review and oversight by a qualified environmental engineer will be implemented. Property management personnel will be notified of the nature and extent of the contamination and easement holders would be notified prior to any on-site construction activity.

4.0 IDENTIFICATION OF AUTHOR

This Section 20107(a) compliance "Due Care" analysis has been prepared in conjunction with and relies upon information developed in the March 2013 Phase I and II ESAs and the BEA conducted by Otwell Mawby, P.C. The details and supplemental information regarding this site are provided in this Section 7a Compliance Analysis or in the supporting documents referenced above. This information should be reviewed in its entirety to provide background information supportive of this Section 7A Compliance Analysis.

The signatures of the environmental professionals responsible for this Section 20107(a) Compliance Analysis are provided below. The credentials of these individuals are included in Appendix B of this Section 20107(a) compliance "Due Care" analysis.



Roger L. Mawby, P.E.
Principal, Project Manager



James A. Jackson II
Environmental Professional

April 4, 2013

Project Number 13-004

Date of Section 20107(a) compliance "Due Care" Analysis Completion