

**ATTACHMENT B3a  
(SCRAP TIRE MONOFILL OR NONCONTIGUOUS MONOCELL)**

INFORMATION TO BE SHOWN ON PLANS AND/OR SUBMITTED WITH PLANS

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**DETAIL ENGINEERING PLAN COVER SHEET**

(B)(1)(a)	Name of the scrap tire facility		
(B)(1)(b)	Precise geographic location, boundaries, etc.		
(B)(1)(c)	Name and address of the applicant		
(B)(1)(d)	Name and address of the owner and of the operator		
(B)(1)(e)	Name and address of the person who prepared the plans		
(B)(1)(f)	Index of plan sheets		

**PLAN DRAWINGS**

(B)(2)(b)(i)	All zoning classifications, property owners, political subdivisions		
(B)(2)(b)(ii)	Limits of sole source aquifer		
(B)(2)(b)(iii)	Limits of the regulatory floodplain		
(B)(2)(b)(iv)	National park or recreation area, candidate areas for potential inclusion into the national park system, and any state park or established state park purchase areas		
(B)(2)(b)(v)	State nature preserves, state wildlife areas, national and state scenic rivers, any national wildlife refuge, special interest areas, research natural areas in the Wayne National Forest, outstanding resource waters, coldwater habitats, and exceptional warmwater habitats		
(B)(2)(b)(vi)	Public and private water supply wells and their status (to be shown within 2,000' of waste placement)		
(B)(2)(b)(vii)	Limits of wellhead protection areas, etc.		
(B)(2)(b)(viii)	Surface and underground mining (to be shown within 2,000' of the limits of waste placement)		
(B)(2)(b)(ix)	Domiciles within 500 feet		
(B)(2)(b)(x)	Faults that have had displacement in Holocene time		
(B)(2)(c)	Limits of disturbance and the facility boundary		
(B)(3)(b)	Location of existing and proposed pipes and conduits, etc.		
(B)(3)(c)	Location of subsurface investigation sites		
(B)(3)(d)	Potentiometric maps of the uppermost aquifer system		
(B)(3)(e)	Location of ground water control structures		
(B)(3)(f)	Diagram of phases		
(B)(3)(g)	Land set aside for leachate treatment/pretreatment		
(B)(3)(h)	Location of all surface waters		

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**PLAN DRAWINGS** (continued)

(B)(4)(a)	Horizontal and vertical limits of excavation		
(B)(4)(b)	Horizontal limits and elevations of soil liner		
(B)(4)(c)	Elevations and layout of leachate management system		
(B)(4)(d)	Horizontal limits and top and bottom elevations of waste placement		
(B)(4)(e)	Horizontal limits and top and bottom elevations of cap system and surface drainage		
(B)(4)(f)	Grid system		

**CROSS SECTIONS**

(B)(5)(a)(i)	Existing topography		
(B)(5)(a)(ii)	Horizontal and vertical limits of excavation		
(B)(5)(a)(iii)	Horizontal limits and bottom elevations of any added geologic material		
(B)(5)(a)(iv)	Horizontal limits and bottom elevations of the recompacted soil liner		
(B)(5)(a)(v)	Geologic stratigraphy and significant zones of saturation		
(B)(5)(a)(vi)	Uppermost aquifer and saturated strata above aquifer		
(B)(5)(a)(vii)	Well logs of intercepted borings		
(B)(5)(a)(viii)	Any permanent ground water control structures		
(B)(5)(b)(i)	Existing topography		
(B)(5)(b)(ii)	Limits of excavation		
(B)(5)(b)(iii)	Limits of waste placement		
(B)(5)(b)(iv)	Horizontal limits and top and bottom elevations of cap system		
(B)(5)(c)(i)	Limits of existing waste (if proposed vertical expansion)		
(B)(5)(c)(ii)	Approved and proposed limits of waste placement (if proposed vertical expansion)		

**SYSTEMATIC DEVELOPMENT PLANS**

(B)(6)(a)	Any leachate management or surface water control structures to be installed prior to accepting waste in the depicted phase		
(B)(6)(b)	Extent of waste placement		
(B)(6)(c)	Contours of previously filled phases		
(B)(6)(d)	Limits of cover on previously filled phases		
(B)(6)(e)	Contours of bottom limits of waste placement		
(B)(6)(f)	Access roads		
(B)(6)(g)	Surface water flow and points of concentration and measures to control		

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**DETAIL DRAWINGS**

(B)(7)(a)	Liner system, including interface between phases		
(B)(7)(b)	Composite cap system		
(B)(7)(c)	Relationship of composite cap system, leachate management system, soil liner, etc.		
(B)(7)(d)(i)	Leachate collection layer		
(B)(7)(d)(ii)	Collection pipes, bedding media, boots		
(B)(7)(d)(iii)	Filter layer		
(B)(7)(d)(iv)	Sumps		
(B)(7)(d)(v)	Conveyance structures		
(B)(7)(d)(vi)	Storage tanks		
(B)(7)(e)	Permanent ground water control structures, if any		
(B)(7)(f)	Sedimentation pond, discharge structures, etc.		
(B)(7)(g)	Other (e.g. structural fill, transitional cover, etc)		

**NARRATIVE DESCRIPTION/INFORMATION (Summary)**

(C)(1)	Summary of the site environs, including discussion on compliance, waste placement limits, location restriction demonstrations and operating criteria		
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**VARIANCE AND EXEMPTION REQUESTS**

(C)(2)	Any requests for variances and exemptions.		
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**SITE INVESTIGATION (Description of geology and hydrogeology)**

(C)(3)(b)(i)	Yield of regional aquifer		
(C)(3)(b)(ii)	Direction of flow in regional aquifer		
(C)(3)(b)(iii)	Recharge and discharge areas of regional aquifer		
(C)(3)(b)(iv)	Regional stratigraphy		
(C)(3)(b)(v)	Regional geomorphology		
(C)(3)(c)(i)	Letter from ODNR regarding mining in area		
(C)(3)(c)(ii)	Documentation of who owns the mineral rights		
(C)(3)(c)(iii)	Letter from ODNR regarding oil and gas wells in area		
(C)(3)(c)(iv)	Letter from COE regarding wetland delineation		
(C)(3)(d)(i)(a)(i)	Textural classification of soil - USCS		
(C)(3)(d)(i)(a)(ii)	Rock type		
(C)(3)(d)(i)(a)(iii)	Color, moisture content, etc		
(C)(3)(d)(i)(a)(iv)	Hydraulic conductivity		
(C)(3)(d)(i)(b)	Thickness		

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**SITE INVESTIGATION** (Description of geology and hydrogeology, continued)

(C)(3)(d)(i)(c)	Lateral extent		
(C)(3)(d)(i)(d)	Depth and elevation		
(C)(3)(d)(i)(e)	Variations in texture, etc.		
(C)(3)(d)(ii)	Local geomorphology		
(C)(3)(d)(iii)	Local structural geology		
(C)(3)(d)(iv)(a)	Temporal fluctuations in ground water levels and effects on flow		
(C)(3)(d)(iv)(b)	Interpretation of the ground water flow system		
(C)(3)(d)(iv)(c)	Characterization of recharge and discharge areas of the site		
(C)(3)(d)(iv)(d)	Yield of significant zones of saturation		
(C)(3)(d)(v)	Justification, if necessary, that no 100 gpm aquifer is present		

**SITE INVESTIGATION** (Subsurface investigation information)

(C)(3)(e)(i)(a)	Publicly available well logs		
(C)(3)(e)(i)(b)	ODNR ground water resource maps		
(C)(3)(e)(i)(c)	Other publicly available information used for (C)(3)(b) and (B)(2)		
(C)(3)(e)(ii)	Logs of subsurface investigation		
(C)(3)(e)(iii)	Construction diagrams of wells and piezometers		
(C)(3)(e)(iv)	Logs of subsurface investigation		
(C)(3)(e)(v)(a)	Grain size distribution		
(C)(3)(e)(v)(b)	Atterberg limits		
(C)(3)(e)(v)(c)	Specific gravity		
(C)(3)(e)(v)(d)	Unit weight, in situ		
(C)(3)(e)(v)(e)	Moisture content, in situ		
(C)(3)(e)(v)(f)	Dry unit weight		
(C)(3)(e)(v)(g)	Results ASTM D3080, ASTM D2850, ASTM D6467 for bearing capacity		
(C)(3)(e)(v)(h)	Results ASTM D3080, ASTM D4767, ASTM D6467 for stability		
(C)(3)(e)(v)(i)	Results ASTM D2850 for pore water pressure		
(C)(3)(e)(v)(j)(i)	Coefficient of consolidation for settlement		
(C)(3)(e)(v)(j)(ii)	Over consolidation ratio for settlement		
(C)(3)(e)(v)(j)(iii)	Pre-construction pressure for settlement		
(C)(3)(e)(v)(j)(iv)	Compression index for settlement		
(C)(3)(e)(v)(j)(v)	Swelling index for settlement		
(C)(3)(e)(v)(j)(vi)	In situ void ratio for settlement		
(C)(3)(e)(v)(j)(vii)	Effective porosity for settlement		
(C)(3)(e)(vi)	Any other data		

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**SITE INVESTIGATION** (Description of methodology)

(C)(3)(f)(i)	Sampling methods used to characterize soil and rock		
(C)(3)(f)(ii)	Analytical methods used to characterize soil and rock		
(C)(3)(f)(iii)	Methodology and procedures used to define the uppermost aquifer, etc.		

**STABILITY ANALYSIS**

(C)(4)(a)(i)	Findings of subsurface investigation for hydrostatic uplift		
(C)(4)(a)(ii)	Rationale used for hydrostatic uplift parameters		
(C)(4)(a)(iii)	Method used to calculate hydrostatic uplift		
(C)(4)(a)(iv)	Assessed failure modes and conditions		
(C)(4)(a)(v)	Rationale used for hydrostatic critical cross-section		
(C)(4)(a)(vi)	Temporal high phreatic and piezometric surfaces		
(C)(4)(a)(vii)	Profile view of critical area		
(C)(4)(a)(viii)	Hydrostatic uplift calculations		
(C)(4)(b)(i)	Findings of subsurface investigation for bearing capacity		
(C)(4)(b)(ii)	Rationale used for bearing capacity parameters		
(C)(4)(b)(iii)	Method used to calculate bearing capacity		
(C)(4)(b)(iv)	Assessed failure modes and conditions		
(C)(4)(b)(v)	Profile view of critical area		
(C)(4)(b)(vi)	Plan view of critical cross-section		
(C)(4)(b)(vii)	Bearing capacity calculations		
(C)(4)(c)(i)	Findings of subsurface investigation for static stability		
(C)(4)(c)(ii)	Rationale used for static stability parameters		
(C)(4)(c)(iii)	Method used to calculate static stability		
(C)(4)(c)(iv)	Assessed failure modes and conditions		
(C)(4)(c)(v)	Rationale for choosing internal, interim, and final slopes cross-sections		
(C)(4)(c)(vi)	Profile views of critical cross-sections		
(C)(4)(c)(vii)	Plan views of critical cross-sections		
(C)(4)(c)(viii)	Summary of results		
(C)(4)(c)(ix)	Static stability calculations		
(C)(4)(d)(i)	Findings of subsurface investigation for seismic stability		
(C)(4)(d)(ii)	Rationale used for seismic stability parameters		
(C)(4)(d)(iii)	Method used to calculate seismic stability		
(C)(4)(d)(iv)	Assessed failure modes and conditions		
(C)(4)(d)(v)	Rationale for choosing internal, interim, and final slopes cross-sections		

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**STABILITY ANALYSIS (continued)**

(C)(4)(d)(vi)	Profile views of critical cross-sections		
(C)(4)(d)(vii)	Plan views of critical cross-sections		
(C)(4)(d)(viii)	Summary of results		
(C)(4)(d)(ix)	Seismic stability calculations		
(C)(4)(e)(i)	Findings of subsurface investigation for settlement		
(C)(4)(e)(ii)	Rationale used for settlement parameters		
(C)(4)(e)(iii)	Method used to calculate settlement		
(C)(4)(e)(iv)	Assessed failure modes and conditions		
(C)(4)(e)(v)	Summary of results		
(C)(4)(e)(vi)	Settlement calculations		

**CALCULATIONS**

(C)(5)(a)	Volume and life of the facility and each unit		
(C)(5)(b)	Liner thickness		
(C)(5)(c)	Leachate head and flow		
(C)(5)(d)	Amount of leachate to be recirculated and leachate head and flow		
(C)(5)(e)	Leachate storage tank size		
(C)(5)(f)	Pump size		
(C)(5)(g)	Pipe strength and pipe deflection		
(C)(5)(h)	Itemized closure costs - If not presented on PTI Attachment A		
(C)(5)(i)	Itemized post-closure care costs - If not presented on PTI Attachment A		
(C)(5)(j)	Soil erosion		
(C)(5)(k)	Surface water control structure size		
(C)(5)(l)	Sedimentation basin		
(C)(5)(m)	Other		

**CONSTRUCTION INFORMATION**

(C)(6)	Physical and chemical resistance of FML and LCS pipes		
(C)(6)	Compaction equipment slope limitations		

**OPERATIONAL INFORMATION**

(C)(7)(a)	Authorized maximum daily waste receipt		
(C)(7)(b)	Technique of waste receipt		
(C)(7)(c)	Type of equipment to be used for construction, operation, and maintenance		

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**PLANS**

(C)(8)(a)	QA/QC plan		
(C)(8)(b)	Final closure/post-closure care plan		

**NOTIFICATIONS AND CERTIFICATION**

(C)(9)(a)(i)	Letter of intent to the local government authority		
(C)(9)(a)(ii)	Letter of intent to the solid waste management district		
(C)(9)(a)(iii)	Letter of intent to the owner or lessee		
(C)(9)(a)(iv)	Letter of intent to the local zoning authority		
(C)(9)(a)(v)	Letter of intent to the park system administrator		
(C)(9)(a)(vi)	Letter of intent to the conservancy district		
(C)(9)(b)	List of permits, licenses, plans approvals, authorizations that have been applied for - If not presented on PTI Attachment A		
(C)(9)(c)	Proof of property ownership or lease agreement		