MATERIAL MANAGEMENT PLAN ADDENDUM
THE COSMOS DEVELOPMENT
800 Block East Washington Avenue
Madison, WI 53703

The primary objective of the material management plan (MMP) is to ensure that contaminated soil and groundwater encountered during the development activities is managed according to applicable regulations in order to protect human health and the environment. Additionally, the MMP is intended to minimize potential delays related to contaminated material handling issues during the construction. Contractors working on the project should be aware that contaminated materials may be encountered during the excavation and should be prepared to handling the materials appropriately. Exposures to contaminated materials during construction are expected to be similar to levels elsewhere in downtown Madison. Worker exposure can be mitigated by good hygiene practices.

Development at the site will include the following excavation/ surface disturbance activities where the contaminated materials may be encounters:

- Trenching for and installation of underground utilities
- Excavation for foundation elements
- General site grading

The majority of the impacted soil at the site contains chemicals that represent a long-term direct contact hazard or potential groundwater contamination hazard. Because of this the primary approach for management of contaminated soils will be to keep the soil on site so that it may be placed under an area which will be capped by concrete. If construction activities require soils to be removed from the property the soils will be considered "contaminated" and will require special handling. **Soils removed from the site will be taken to an approved disposal facility.**

Identified soil contamination is located in a number of areas around the site. Contaminants identified in the soil include chlorinated volatile organic compounds (CVOCs), polynuclear aromatic hydrocarbons (PAHs) and various metals such as lead and arsenic. The locations of the identified soil contamination are shown on the attached map (Exhibit A). If, during construction activities, contamination is noted in areas other than those shown on the map the contractors should notify the site representative so that appropriate sampling can be conducted in those areas. Indicators of suspected contamination include changes in soil color/staining, odors, and an oily appearance.

General Description of Planned Excavation Activities

The planned development includes construction of a single large 8 story building and associated outdoor walkways and terraces. To facilitate the construction existing hardscape and shallow soils will be removed to a depth of ~1 foot. Trench excavation will be conducted to a depth of 4 feet in the areas of the exterior and interior footing walls. Groundwater will not be encountered during this work since it is present at a depth of ~8-10 feet. Water may accumulate within this excavation as the result of precipitation. This water should be treated at natural stormwater and may be discharged from the site through the stormwater sewer system in accordance with the construction stormwater and erosion control permit; care should be taken to minimize suspended sediment in this water prior to discharge. Locally deeper soils from 4-8 feet below grade will be excavated for installation of piling caps and utility trenches. Groundwater may be encountered during this deeper subgrade work. Since this water will not be stormwater resulting from precipitation it cannot be discharged to the storm sewer system without appropriate WDNR permits. Alternatively, water generated during the deeper subgrade work may be discharged to the Madison Metropolitan Sewerage System.

Contaminated Soil Excavation and Handling

Soils across the project area are impacted by various chemical contaminants. The type(s) and concentration of the contaminants in the soils vary significantly on the project site. Based on sampling data two distinct types of soil contamination are present. The location of the two types of waste soil at the site is shown on Exhibit B and analytical data is summarized in an attached table (Exhibit C). Material handling requirements for the soil types are described below.

Type 1 - Soils containing high CVOC levels

The most hazardous soils contain high levels of CVOCs (tetrachloroethene and trichloroethene). These chemicals are highly volatile and mobile. The chemicals can accumulated at hazardous levels beneath buildings and can migrate through the building slab and lead to hazardous contaminant levels in the indoor air. For this reason if CVOC impacted soils are excavated they will be removed from the site prior to building construction. The excavated soil will be taken to WMI Madison-Prairie Landfill for direct disposal.

Type 2 - Soils with Elevated Metals and PAH levels

Sampling identified soils at the site which contain select metals and PAHs (polynuclear aromatic hydrocarbons) at concentrations that exceed the direct contact hazard level for industrial properties. These soils do not represent an impediment to the proposed future usage of the site and may be relocated on the property as possible. If removal of these soils is necessary for the project they will require disposal at a sanitary landfill.

Care should be taken during any excavation/grading activities to minimize comingling of soils from the two distinct waste types. If soils from the areas of Type 2 contamination are mixed with Type 1 soils the resulting material will require handling as Type 1 waste since the presence of CVOCs in the waste requires that the materials be placed directly into disposal cells at the landfill. Additionally, any soil from comingled waste types will require extra assessment activities, possibly including sample analysis, prior to replacing on site beneath the building.

Unidentified Contamination / Underground Tanks

We do not anticipate encountering significant areas of contaminated soils or buried tanks/structures that have not been identified since there has been quite a bit of investigation at the site. However, the site has been an active industrial area for over 70 years with numerous automotive-related businesses. Excavation oversight and testing by the environmental consultant may be necessary to determine the appropriate handling for some of the contaminated soils encountered.

If obvious soil contamination is noted during the subgrade work the environmental consultant should be contacted so that soils may be inspected, screened for organic vapors, and sampled as needed. Soils that exhibit greater than 10 vppm organic vapors will be segregated from soils with low organic vapor levels. The soils with low organic vapor levels may be placed anywhere beneath the concrete slabs at the site. The soils with higher than 10 vppm organic vapors will be handled as Type 2 waste.

Soil Stockpiling

Low levels of contaminants, particularly PAHs, are widespread across the work area. During the course of the project it may be necessary to temporarily stockpile soils at the site for logistical reasons. All soils that require stockpiling should be considered "contaminated". Soils should be stockpiled in accordance with WDNR guidelines (NR718). Specifically, the soils should be:

- Placed in areas not subject to accumulation of storm water runoff
- Placed on impervious material such as pavement or plastic sheeting
- Covered to prevent contact with precipitation

Groundwater Management

Groundwater may be generated during the construction project where dewatering is required for subgrade activities such as utility installation, elevator shaft construction, and foundation piling placement. Any water generated should be considered "contaminated" based on the historic used of the property and previous sampling results. Groundwater generated will require special handling and cannot be discharged to the storm sewer system without prior approval. Acceptable alternatives for handling water generated during the dewatering process include discharge to the sanitary sewer system for treatment or discharge to the storm sewer system under a WPDES permit. Requirements for the two discharge options are outlined below.

Sanitary Discharge

Water generated during dewatering may be sent to the Madison Metropolitan Sewerage Department (MMSD) for treatment. This may be done either using septic trucks or by sending the water through the City of Madison sewers. Approval from MMSD will be required prior to discharge. Additionally, if the water is discharged via the sanitary sewer system the City of Madison must approval to use the sewers.

Surface Water Discharge

Water generated during dewatering may be discharged to surface waters. This will require a WPDES permit from the WDNR. The WPDES permit will set contaminant discharge limits and sampling requirements. Additionally, a permit from the City of Madison will be required to use the municipal storm sewer system. If the pumping from the dewatering system exceeds ~70 gpm a high capacity well permit issued by the WDNR also will be required.

Roles and Responsibilities

Developer or Owner's Agent

- Coordinate project scheduling
- Retain contractor and environmental consultant
- Contact environmental consultant to provide necessary soil evaluation activities
- Sign manifest for waste disposal as needed

General Contractor

- Provide necessary health and safety information to workers related to working with contaminated soils
- Provide owner and environmental consultant with schedule for work in areas of identified contamination
- Notify owner if suspected contamination is encountered in areas not previously identified
- Maintain contaminated soil stockpiles appropriately
- Provide appropriate personnel and equipment for loading and hauling of contaminated soils to landfill
- Maintain records documenting the location of contaminated soils relocated at the site

Environmental Consultant

- Coordinate with landfill / industrial fill site for disposal approval
- Conduct sampling for waste profiling as needed
- Provide on-site soil screening and observations to characterize soils as necessary
- Communicate with owner/contractor regarding environmental concerns during construction activities
- Provide documentation of activities during any oversight

Project Contacts

Developer:

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General Contractor:

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Environmental Consultant:

Robyn Seymour
Seymour Environmental Services
2531 Dyreson Road
McFarland, WI 53558
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Landfill Disposal:

Lisa Olson
Waste Management – Mad Prairie Landfill
6002 Nelson Road
Sun Prairie, WI 53590
(608) 837-9031

Construction Debris

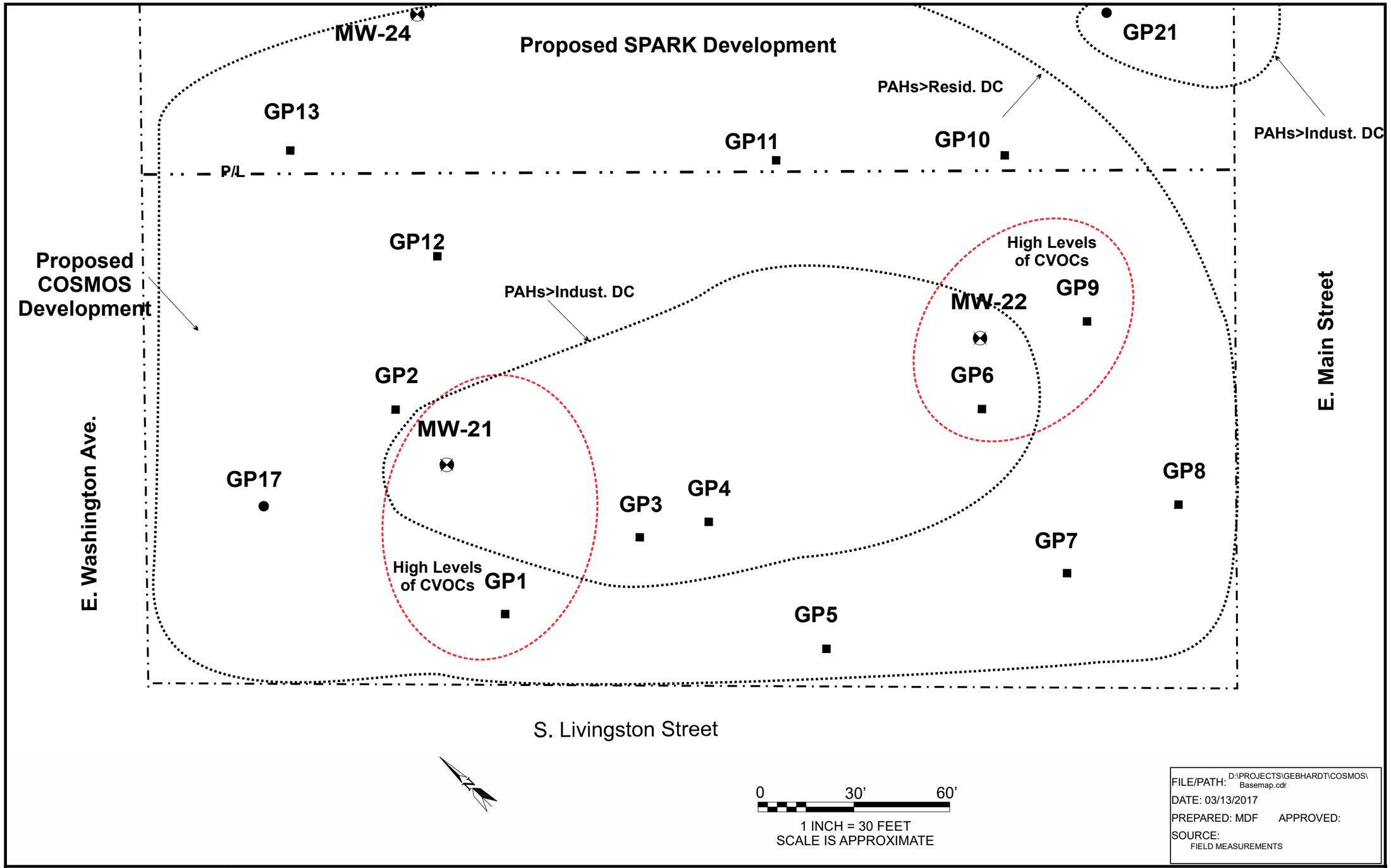
Jim Mandt
Mandt's Sand and Gravel
2079 Highway MM
Oregon, Wisconsin 53575
(608) 835-5858

WDNR:

Mr. Wendell Wojner
WDNR R&R
3911 Fish Hatchery Road
Fitchburg, WI
(608) 275-3297

Wastewater Disposal:

Ralph Erickson
MMSD
1610 Moorland Road
Madison, Wisconsin 53713
(608) 222-1201 extension 362

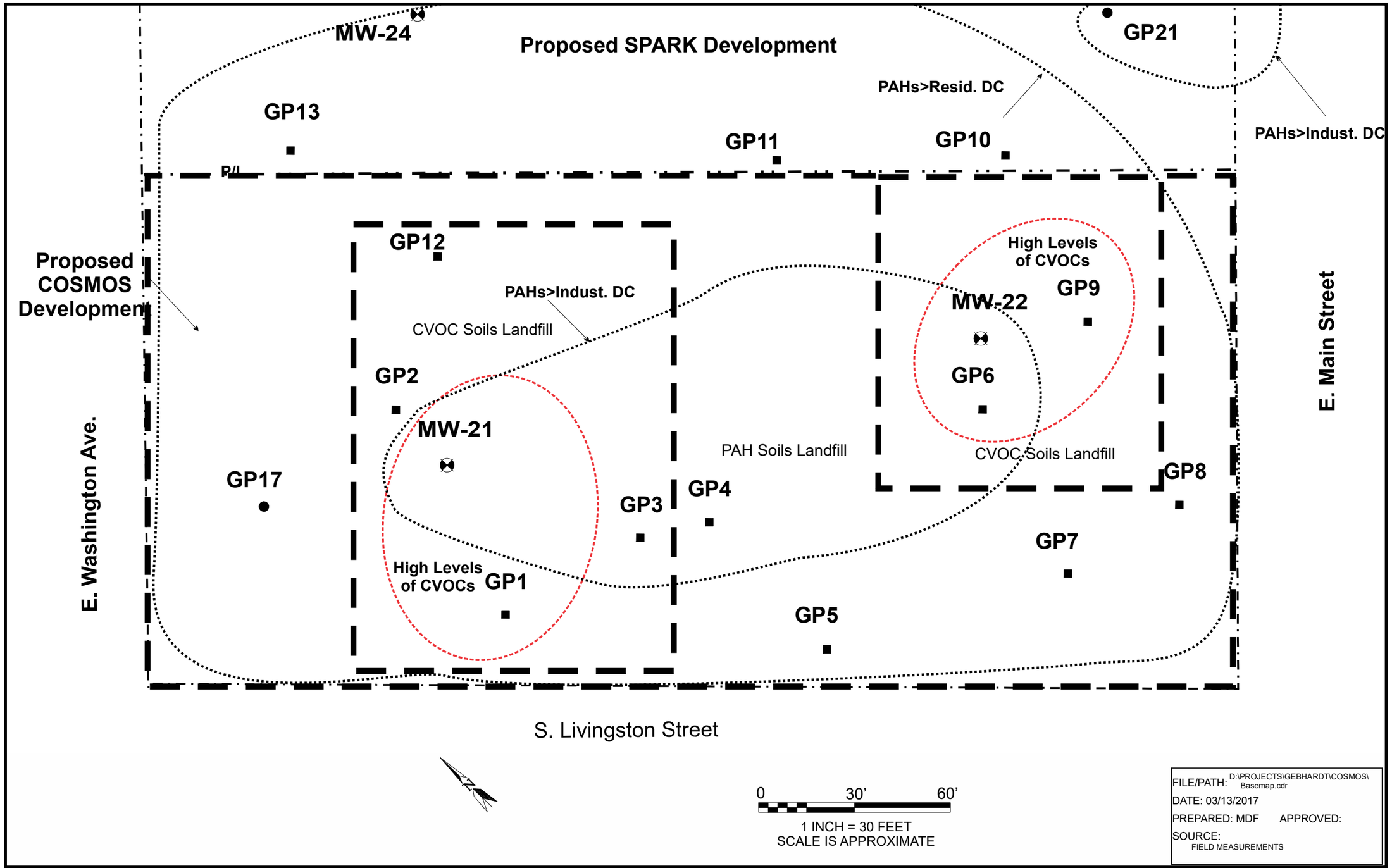


SEYMOUR
ENVIRONMENTAL
SERVICES, INC.

IDENTIFIED CONTAMINATION
COSMOS DEVELOPMENT
801 East Washington Avenue
Madison, Wisconsin

EXHIBIT

A



SEYMOUR ENVIRONMENTAL SERVICES, INC.

IDENTIFIED WASTE STREAMS
COSMOS DEVELOPMENT
801 East Washington Avenue
Madison, Wisconsin

EXHIBIT

B

EXHIBIT C
SUMMARY OF SOIL ANALYTICAL DATA BY MATERIAL HANDLING WASTESTREAMS
COSMOS DEVELOPMENT - 801 East Washington Avenue -Madison, WI

MATERIAL HANDLING TYPE	Waste Stream 1 "CVOC impacted Soils" ~18,100 ft2 41.72% of Site								Waste Stream 2 "High PAH Soils" ~25,300 ft2 58.28% of Site						WDNR STANDARDS			
Sample I.D.	GP1	GP2	GP3	GP6	GP9	GP12	MW-21	MW-22	GP7	GP8	GP17	GP4	GP4	GP5	Groundwater Pathway RCL	Direct Contact Hazard RCL		Background Threshold Value
Date	7/21/15	7/21/15	7/21/15	7/21/15	7/22/15	7/22/15	4/12/16	4/12/16	7/21/15	7/22/15	4/12/16	7/21/15	7/21/15	7/21/15				
Depth (ft)	2.5-5	2.5-5	2.5-5	2.5-5	2.5-5	2.5-5	2-3	2-6	2.5-5	2.5-5	4-5	2.5-5	10-12.5	2.5-5		Non-Industrial	Industrial	
Detected VOCs																		
Benzene	<5.6	<4.0	<4.9	<4.5	<5.3	<4.2	<20	<21	<5.3	<5.5	<13	<3.9	<5.1	<5.9	5.1	1490	7410	--
Ethylbenzene	<9.5	<6.8	<8.4	18	<9.0	<7.1	110	37	<8.9	<9.3	<16	<6.7	<8.7	<10	1570	7470	37000	--
Methyl-tert-butyl ether	<33	<23	<28	<26	<31	<24	<54	<57	<31	<32	<34	<23	<30	<34	27	59400		--
Toluene	<8.7	<6.2	<7.6	58	<8.2	<6.5	130	56	<8.2	<8.5	<13	<6.1	<7.9	<9.2	1107	818000	818000	--
1,3,5 Trimethylbenzenes	<16	<11	<14	<12	<15	<12	190	<55	<15	<15	<33	<11	<14	<17	ns	182000	182000	--
1,2,4 Trimethylbenzenes	<16	<11	<14	90	<15	<12	170	120	<15	<16	<31	<11	<15	<17	ns	89800	219000	--
Total Trimethylbenzenes	<32	<22	<28	90	<30	<24	360	120	<30	<31	<64	<22	<29	<34	1379	ns		--
Total Xylenes	<5.2	<3.7	<4.5	150	<4.9	<3.8	1000	220	<4.9	<5.0	<19	<3.6	<4.7	<5.5	3940	258000	258000	--
Naphthalene	nd	nd	nd	140	nd	nd	nd	140	nd	nd	nd	nd	nd	nd	658.7	5150	26000	--
Isopropylbenzene	nd	nd	nd	nd	nd	nd	71	nd	nd	nd	nd	nd	nd	nd	ns			--
n-Propylbenzene	nd	nd	nd	nd	nd	nd	130	nd	nd	nd	nd	nd	nd	nd	ns	264000		--
Tetrachloroethene	**570**	**280**	**49**	nd	**880**	**28**	**3200**	**420**	nd	nd	nd	nd	nd	nd	4.5	30700		--
Trichloroethene	nd	nd	nd	**300**	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	3.6	1260		--
1,2 Dichlorobenzene	nd	nd	nd	90	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1168	376000		--
n-Butylbenzene	nd	nd	nd	nd	nd	nd	140	nd	nd	nd	nd	nd	nd	nd	ns			--
1,1,1 Trichloroethane	nd	nd	nd	nd	nd	nd	**560**	nd	nd	nd	nd	nd	nd	nd	140.2	640		--
Trichlorofluoromethane	nd	nd	nd	nd	nd	nd	140	nd	nd	nd	nd	nd	nd	nd	ns	1230		--
PAHs																		
Acenaphthrene	<7.2	<6.3	<6.8	<6.4	<7.0	<6.3	8.8	240	<7.0	<7.3	9.3	<5.9	na	<7.6	--	3,440,000	33,000,000	--
Acenaphthylene	<5.3	15	29	210	12	5.2	30	70	28	22	10	<4.4	na	<5.6	--	--	--	--
Anthracene	<6.7	17	51	77	14	<5.8	44	780	41	69	83	<5.5	na	<7.1	196,744	17,200,000	100,000,000	--
Benzo(a)anthracene	44	63	260	880	57	<4.7	160	1700	120	200	150	<4.4	na	<5.7	--	148	2110	--
Benzo(a)pyrene	54	60	260	**1100**	74	31	140	**1600**	150	200	150	<6.4	na	<8.2	470	15	211	--
Benzo(b)fluoranthene	65	81	380	**1300**	93	41	220	**2100**	190	180	200	<7.1	na	54	480	148	2110	--
Benzo(g,h,i)perylene	52	<11	210	740	73	<11	55	740	110	130	39	<11	na	<14	--	--	--	--
Benzo(k)fluoranthene	<12	46	150	680	42	13	83	810	82	120	100	<9.7	na	<13	--	1,480	21,100	--
Chrysene	57	110	**360**	**990**	77	<9.5	**200**	**1900**	**170**	**210**	**150**	<9.0	na	<12	145.1	14,800	211,000	--
Dibenzo(a,h)anthracene	<7.8	<6.7	68	64	<7.5	<6.7	<7.5	160	<7.5	40	<7.3	<6.4	na	<8.2	--	15	211	--
Fluoranthene	100	150	370	1700	82	25	320	4400	200	380	360	<6.1	na	72	88,818	2,290,000	22,000,000	--
Fluorene	<5.6	<4.9	<5.3	<5.0	<5.5	<4.9	13	410	<5.5	12	21	<4.6	na	<6.0	14,815	2,290,000	22,000,000	--
Indeno(1,2,3-cd)pyrene	43	<9.0	190	640	41	<9.0	58	770	83	95	56	<8.6	na	<11	--	148	2110	--
1-Methylnaphthalene	42	120	470	72	52	<8.5	950	250	160	<9.9	<9.2	<8.1	na	<10	--	15,600	53,100	--
2-Methylnaphthalene	<7.4	150	640	73	46	15	1300	950	200	<7.4	<7.0	<6.1	na	<7.8	--	229,000	2,200,000	--
Naphthalene	<6.2	82	470	51	23	<5.4	**730**	**780**	71	7.7	<5.8	<5.1	na	<6.5	658.7	5,150	26,000	--
Phenanthrene	99	190	350	230	120	27	980	6200	300	270	310	<4.6	na	50	--	--	--	--
Pyrene	68	140	500	1800	94	51	360	4600	230	550	300	6.9	na	57	54,772	1,720,000	16,500,000	--
PRIORITY METALS																		
Arsenic	**9.1**	1.7	**16**	5.9	7.8	1.2	na	na	4.8	7.1	na	5.1	na	7.6	0.584	0.614		8
Barium	150	21	99	31	240	12	na	na	86	94	na	1.6	na	160	164.8	15,300		364
Cadmium	0.76	0.59	0.83	**2.2**	0.71	0.37	na	na	**1.9**	0.83	na	0.10	na	0.42	0.752	70		1
Chromium	8.5	5.1	11	5.5	8.8	5.8	na	na	10	17	na	3.2	na	16	360,000	0.293		44
Lead	**290**	25	**160**	39	**620**	27	na	na	**84**	32	na	3.1	na	**510**	27	400	800	52
Mercury	0.32	0.04	0.18	0.03	0.20	0.021	na	na	0.11	0.30	na	0.01	na	0.15	0.208	3.13		--
Selenium	4.5	0.72	2.3	2.6	2.2	<0.48	na	na	3.1	3.0	na	<0.51	na	0.99				--
Silver	0.18	<0.13	<0.14	<0.11	0.34	<0.11	na	na	<0.14	0.18	na	<0.12	na	<0.15				--

- VOC and PAHs reported in ug/kg; metals data in mg/kg
- na = not analyzed
- nd = not detected
- ns = no standard established
- WDNR Background Threshold Values (exceedances shaded)
- Groundwater Protection RCL is generic value from R&R calculator (exceedances bold)
- Direct Contact Hazard Residential = Non-industrial property standard (exceedances underlined)
- Direct Contact Hazard Industrial. = Industrial property standard (exceedances boxed)