City of Pleasant Ridge
23925 Woodward Avenue
Pleasant Ridge, Michigan 48069

City Commission Meeting
April 18, 2017
Agenda

Honorable Mayor, City Commissioners and Residents: This shall serve as your official notification of the Regular City Commission Meeting to be held Tuesday, April 18, 2017, at 7:30 p.m., in the City Commission Chambers, 23925 Woodward Avenue, Pleasant Ridge, Michigan 48069. The following items are on the Agenda for your consideration:

REGULAR CITY COMMISSION MEETING – 7:30 P.M.

1. **Meeting Called to Order.**

2. **Pledge of Allegiance.**

3. **Roll Call.**

4. **Introduction of Part-time Police Officer Julie Reid.**

5. **PUBLIC DISCUSSION – items not on the Agenda.**

6. **Governmental Reports.**

7. **City Commission Liaison Reports.**
   - **Commissioner Scott – Historical Commission**
   - **Commissioner Krzysiak – Recreation Commission**
   - **Commissioner Foreman – Ferndale Public Schools**
   - **Commissioner Perry – Planning/DDA, Committee Liaison**

8. **Consent Agenda.**
   All items listed on the Consent Agenda are considered to be routine by the City Commission, will be enacted by one motion and approved by a roll call vote. There will be no separate discussion of these items unless a City Commissioner or visitor so requests, in which event, the item will be removed from the consent agenda and considered as the last item of business.
   a. Minutes of the Regular City Commission Meeting held Tuesday, March 14, 2017 and the Special City Commission Meeting held Tuesday, March 28, 2017.
   b. Monthly Disbursement Report.
   c. Resolution recognizing Teacher Appreciation Week, May 1 through May 5, 2017.
   d. Request by Seventh-Day Adventist Church to solicit door-to-door for the months of June, July and August 2016.
   e. Request by the Pleasant Ridge Foundation for the City to donate certain items to its Annual Auction, Saturday, May 20, 2017.

9. **2017 Pleasant Ridge City Commission Goals and Objectives.**

10. **Iron Ridge LLC Brownfield Development Plan discussion.**

11. **City Taxable Value and Headlee Rollback discussion.**

12. **City Manager's Report.**

13. **Other Business.**

14. **Adjournment.**

In the spirit of compliance with the Americans with Disabilities Act, individuals with a disability should feel free to contact the City at least seventy-two (72) hours in advance of the meeting, if requesting accommodations.

City of Pleasant Ridge
23925 Woodward Avenue
Pleasant Ridge, Michigan 48069

Regular City Commission Meeting
March 14, 2017

Having been duly publicized, Mayor Metzger called the meeting to order at 7:34 p.m.

Present:	Commissioners Foreman, Krzysiak, Perry, Scott, Mayor Metzger
Also Present:	City Manager Breuckman, City Attorney Need, City Clerk Drealan
Absent:	None

Announcement

Mayor Metzger announced that the April 11, 2017 City Commission meeting has been rescheduled to April 18, 2017 in observance of Passover.

Amend the Agenda

17-3295

Motion by Commissioner Foreman, second by Commissioner Scott, that Consent Agenda Item 10.D be moved to Item 4.A to accommodate visiting speakers.

Adopted:	Yeas: Commissioners Foreman, Scott, Krzysiak, Perry, Mayor Metzger
	Nays: None

Consent Agenda Item 4.A - Ferndale Youth Assistance Funding

17-3296

Judge Joseph Longo, Chief Judge of 43rd District Court which encompasses the Ferndale School District, made a presentation regarding the history and achievements of Ferndale Youth Assistance. The organization was created in 1955 between the courts and the school system to help address and prevent juvenile delinquency. Some notable events include recognizing students who have made a positive impact in the community and sending students to camp program free of charge. Counseling services, family education and workshops to help with parenting skills are also offered. There will be a workshop on March 29 entitled Love and Logic.

Motion by Commissioner Perry, second by Commissioner Foreman, to approve $1000 funding for Ferndale Youth Assistance for fiscal year 2017.

Adopted:	Yeas: Commissioners Perry, Foreman, Krzysiak, Scott, Mayor Metzger
	Nays: None

EcoWorks Community Energy Management Presentation

Henrik Mader, Energy Analyst, EcoWorks-Detroit, delivered a powerpoint presentation regarding the Community Energy Management project. He briefly discussed EcoWorks' 36-year history including its partnerships with government and business, its green job opportunities and energy savings. Its four main programs are: Residential Education, Reclaim Detroit, Youth Energy Squad, and Strategic Community Initiatives. They are a Michigan Community Energy Partnership member. The Community Energy Management project focuses on providing municipalities with assistance to cost-effectively maximize energy savings. In 2016 Pleasant Ridge was an energy leader, and installed lighting improvement projects that resulted in 75% increase in efficiency. There is also a solar project planned for the Community Center roof. A previous lighting project increased energy efficiency at City Hall by more than 60%. Completing the LED conversion could save an estimated $4000. City Manager Breuckman has been appointed the city's Energy Manager. A revolving energy fund with 50% reinvestment is being considered. The city is looking at a five-year timeline to identify and develop new projects.

Commissioner Perry inquired about solar pool solutions at the community center including a solar water heater. Rob Sakat, 8 Fairwood, asked how EcoWorks is paid. The project is being funded by a grant from the Michigan Energy Office. Matching funds from the city are being provided by the lighting retrofit project.

Infrastructure Improvement Bond Approval and Issuance

City Manager Breuckman noted that notice for these bonds had been sent previously. He presented a proposal to issue bonds with a face value of $3 million that would be repaid over 15 years through the existing infrastructure millage. No new millage would be necessary. The bonds are necessary for road improvement projects. Hanover, Norwich, Ridge, Indiana and Bermuda projects need to be completed. The infrastructure millage generates approximately $400,000. Repayment of the new bonds would be $245, 000 which would leave approximately $150,000 for maintenance. Hope to have bonds issued in mid-April and begin construction. Commissioner Foreman inquired about the impact on school services and discussed adding green enhancements to roads including using pervious concrete for better drainage. Commissioner Krzyiak discussed need to address road issues sooner than had been previously planned. He expressed concern regarding whether sufficient monies will be left for maintenance to address future problems. Some of the original road improvements are still in good condition. Concrete streets should last 50 years with good maintenance. A joint sealing program is being considered. Sewers under the street have been monitored and maintained along with the street projects. Current technology allows for pipe repair without having to dig up the street. Commissioner Scott discussed repayment interest. Mayor Metzger inquired regarding bond rating process. Commissioner Scott confirmed that a budget amendment will be necessary.

17-3297

Motion by Commissioner Foreman, second by Commissioner Perry, to approve the resolution authorizing the City to issue and sell general obligation capital improvement bonds.

Adopted: Yeas: Commissioners Foreman, Perry, Krzysiak, Scott, Mayor Metzger
Nays: None

Governmental Reports

Representative Robert Wittenberg discussed that infrastructure improvement is an important issue throughout the country. He has been conducting coffee hours with the citizens and plans to continue to hold them twice a month. He encouraged citizens to contact him for assistance or with questions. Email: robertwittenberg@house.mi.gov. Phone: 517-373-0478. He serves on the Insurance, Financial Liability and Reform, and Law and Justice Committees. He discussed recent attempts to lower the income tax in Michigan. Commissioner Perry inquired about proposed FOIA amendments to improve transparency in state government. Mayor Metzger raised the issue of straight ticket voting and about auto insurance in Detroit. There was discussion regarding Michigan's poor education reports and how to improve. There was also discussion about pension amendment issues.

Chief Kevin Sullivan, Ferndale Fire Department, reported that they hired another fire fighter and have another one in training. They are hoping to hire one more after union negotiations. The storm outages kept the department very busy.

Chief Kevin Nowak, Pleasant Ridge Police, noted that he spoke to Representative Wittenberg opposing the pension amendments. Without a quality pension it is very difficult to find enough qualified applicants for the department. The department has also been busy helping citizens without power due to the recent storm.

City Commission Liaison Reports

Commissioner Perry reported on the Planning Commission/DDA. The DDA will meet on Monday, March 27 at 7:00 p.m. at City Hall. They will be awarding a grant to one of the local businesses.

Commissioner Scott reported on the Historical Commission. The Museum will be open March 18. The Home and Garden tour will be June 10. Looking for people to volunteer to display their home or garden. On August 2nd there will be a speaker regarding the history of the pool. Anyone with information regarding the history of the pool is requested to contact the city.

Commissioner Krzysiak reported on the Recreation Commission. The Pancake Brunch and Egg Hunt will be April 1. There will be a new *Ridger* out in April. Promptly. Citizens are encouraged to get their fob to access the rec center seven days a week from 5 a.m. till midnight.

Commissioner Foreman reported on Ferndale Public Schools. Amy Butters resigned creating an open seat on the Board. Superintendent Blake Pruitt has applied for a position on the west side of the state. Shouldn't affect this school year. Pruitt will stay committed throughout this school year but will need to fill that vacancy when it comes up. The Spring Musical is *Suessical*, March 18 through 26. The FDF dinner and auction is March 31 with a March Madness theme. Mayor Metzger and Ferndale Mayor Dave Salter will be MCs. The School Board will meet on March 20 at 7:00 p.m. at the high school. They may announce the selection of the new board member at that meeting.

Consent Agenda

17-3298

Motion by Commissioner Foreman, second by Commissioner Scott, that the Consent Agenda be approved as presented.

Adopted: Yeas: Commissioners Foreman, Scott, Krzysiak, Perry, Mayor Metzger
Nays: None

Agreement between the City of Pleasant Ridge and the City of Ferndale for Police Dispatch Services

City Manager Breuckman noted that the city has contracted with the City of Berkley for police dispatch services for many years. The contract is expiring on June 30, 2017. It is proposed to contract with Ferndale for future police dispatch services. There have been no performance related issues with Berkley. One reason for the change is that fire and ems are already with Ferndale so this would remove one step in the 911 emergency call process. The proximity also makes it easier for police to transport prisoners from the lockup in Ferndale. The police currently work closely with Ferndale and the departments back each other up when necessary. There will be a nominal savings of about $1000, but that is not a key reason for the change. There was discussion regarding the good relationship and services the city has received from Berkley in the past.

17-3299

Motion by Commissioner Perry, second by Commissioner Scott, that the agreement between the City of Pleasant Ridge and the City of Ferndale for Police Dispatch services be approved and that the Mayor be authorized to sign the agreement.

Adopted: Yeas: Commissioners Perry, Scott, Foreman, Krzysiak, Mayor Metzger.
Nays: None

Agreement between the City of Pleasant Ridge and the City of Ferndale for Supplemental Building Inspection Services

City Manager Breuckman presented an agreement for a shared services arrangement with the City of Ferndale for Building Inspection services. Either community can ask the other for inspection services at the rate of $75 per hour. One key reason for this collaboration is the pending development project at the Walker Wire site. Ferndale is more experienced with industrial inspections. The boundary between Pleasant Ridge and Ferndale actually bisects the Walker Wire site so this collaboration allows for one inspection team for the entire project. It will also provide backup for both cities as needed. Ferndale has already confirmed the agreement unanimously. No costs would be incurred unless the services were used.

17-3300

Motion by Commissioner Perry, second by Commissioner Foreman, to approve the agreement between the City of Pleasant Ridge and the City of Ferndale for supplemental building inspection services and that the Mayor be authorized to sign the agreement.

Adopted: Yeas: Commissioners Perry, Foreman, Krzysiak, Scott, Mayor Metzger.
Nays: None

Supplemental Appropriation A-2017-001

City Manager Breuckman noted that this is a housekeeping issue changing how retirement costs are allocated. Retirement costs would be allocated by department rather than grouped together. It also amends the budget to account for the bonds and eliminates the transfer from the old Oxford project.

17-3301

Motion by Commissioner Perry, second by Commissioner Scott, to approve the Supplemental Appropriation A-2017-001.

Adopted: Yeas: Commissioners Perry, Scott, Foreman, Krzysiak, Mayor Metzger.
Nays: None

Certification of delinquent utility bills for collection on the 2017 Summer tax roll

City Manager Breuckman noted that this is an annual shift of delinquent utility bills to the tax rolls in lieu of shut off.

17-3302

Motion by Commissioner Perry, second by Commissioner Foreman, to place those properties with unpaid water and sewer charges for a period of at least two quarters, as certified by the City Administration, on the 2017 Summer tax roll as a special assessment.

Adopted: Yeas: Commissioners Perry, Foreman, Krzysiak, Scott, Mayor Metzger.
Nays: None

Resolution - Welcoming Cities

Mayor Metzger presented a powerpoint regarding issues of immigration in Michigan. The Welcoming America program began in 2009 and Michigan was the thirteenth state to join the program. In southeast Michigan, a large majority of immigrants are from Iraq, with India in second. This is a different immigration pattern than the rest of the country. Seven percent of the population of Pleasant Ridge is foreign born. Pleasant Ridge wants to actively demonstrate its openness and inclusiveness. City Manager Breuckman will be the Welcoming Host for the City. Christine Sauve of Welcoming Michigan commented that there are over 100 members across the country. There are other small communities involved for Pleasant Ridge to network with and get ideas. There are many things that Pleasant Ridge is already doing that can include the Welcoming Cities concepts - films about immigration can be shown; the Historical commission can share stories from local immigrants. A city language access policy already exists. Commissioner Foreman inquired as to the amount of staff commitment necessary. There is a need to participate in some education programs and special events. Member cities have access to a member database with resources and sample policies. Commissioner Krzysiak asked whether forming a special commission on this issue is helpful. Some communities have volunteer commissions but involvement of city staff is still necessary.

Ms. Cindy Chouinard, 18 Poplar Park, discussed the possibility of a human rights commission in the city. She has been working on inclusiveness and providing shelter to immigrants for many years. She is in support of creating a commission to help liaison between city and residents which would also help provide an avenue toward finding more volunteers.

Ms. Rana Elmir, 5 Maywood, is a foreign born American Muslim and has been a resident since 2011. The inclusiveness of Pleasant Ridge is one of the reasons she chose to live here. She has, however,

encountered bigotry regarding her religion specifically while walking in the dog park. She feels that a formal resolution would make it clear that immigrants are welcome and wanted in Pleasant Ridge. Chief Kevin Nowak noted that the incident was not reported to the police department and that the police would have prosecuted the individual who harassed her.

Mayor Metzger read the resolution into the record.

17-3303

Motion by Commissioner Krzysiak, second by Commissioner Perry, to approve the resolution as presented for the City of Pleasant Ridge to participate in the Welcoming Cities program.

Adopted: Yeas: Commissioners Krzysiak, Perry, Foreman, Scott, Mayor Metzger.
Nays: None

City Manager's Report

City Manager Breuckman reported that the loose brush pickup has been postponed due to the weather. The regularly scheduled loose brush pick up will be Monday. The Fab Cab transit program is progressing and Royal Oak is interested in participating. The next step will be to sign an interlocal government agreement. The launch is planned for May or June. DTE power is mostly back with about 10 homes still out. Hanover and Norwich water mains and hydrants are being replaced. Consumers Energy will be working on gas mains for the next couple of days. Some neighbors may see discoloration in water. It is recommended to simply run the water for a few minutes until it is clear. Mr. Pietrzak reminded citizens to get their fob for the wellness center. The pool system works differently but working on getting them to use the same fob. There will be new flooring for the small meeting room at the end of March but it may be delayed. The center will need to be shut down for three days to install the flooring. The City only lost one banner on Woodward in the storm and others are being repaired.

Other Business

Commissioner Krzysiak thanked staff for helping make the rec center available for people who needed it in the storm. He also reported that the Book Club for April will be Frederick Beckman, *My Grandmother Asked Me To Tell You She's Sorry.* Wednesday, April 12 at 7:00 p.m. at the community center. The Book Club now meets the second Wednesday of every month.

With no further business or discussion, Mayor Metzger adjourned the meeting at 9:59 pm.

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Mayor Kurt Metzger

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Amy M. Drealan, City Clerk

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City of Pleasant Ridge
23925 Woodward Avenue
Pleasant Ridge, Michigan 48069

Special City Commission Meeting
March 14, 2017

Having been duly publicized, Mayor Metzger called the meeting to order at 6:05 p.m.

Present:	Commissioners Foreman, Krzysiak, Perry, Scott (6:19pm), Mayor Metzger
Also Present:	City Manager Breuckman, City Attorney Need, City Clerk Drealan
Absent:	None

Norwich and Hanover Road Reconstruction Project Bid Award

City Manager Breuckman outlined the bid process regarding the Norwich and Hanover Road Reconstruction project. The project also incorporates a section of pervious pavement at the Oakdale end of each street to provide stormwater infiltration area. The pervious pavement will allow some water to infiltrate into the ground before it gets to the sewer inlet, reducing the amount of stormwater entering the combined sewer system and helping to reduce the amount of water that pools in the street during large storm events. The streets will also be narrowed by one foot on each side of the street. The tree lawns on Hanover and Norwich are very narrow, so widening the tree lawns will provide more area for the street trees to thrive. The streets will still be 25 feet wide, which is wide enough to allow for two-way circulation with parking on one side of the street. There will also be spot sidewalk replacement on both streets.

The City received five bids on the bid opening date of Tuesday, March 7, 2017. The City's engineers, Anderson, Eckstein and Westrick, Inc., (AEW) reviewed the bids received and have recommended the bid be awarded to the lowest qualified bidder, Marj Anthony Contracting of Utica, Michigan. On Wednesday, March 15, 2017, the City Engineer, and City Staff had a pre-award meeting with the contractor to ensure that there was a clear understanding on all sides about the project and the City's expectations. The project will begin on Norwich and is tentative start date is Monday, April 17, 2017. Parking will be allowed on Oakdale and a portion or Ridge Road. The Norwich/Hanover resident meeting will be held on Wednesday, March 29, 2017.

17-3304

Motion by Commissioner Foreman, second by Commissioner Scott, that the bid for the Norwich and Hanover Road Reconstruction Project, be awarded to the lowest qualified bidder, Mark Anthony Contracting, of Utica, Michigan, in the amount of $858,316.

Adopted:	Yeas: Commissioners Foreman, Scott, Krzysiak, Perry, Mayor Metzger
	Nays: None

With no further business or discussion, Mayor Metzger adjourned the meeting at 6:22 pm.

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Mayor Kurt Metzger

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Amy M. Drealan, City Clerk

March 2017

ACCOUNTS PAYABLE

PAYROLL LIABILITIES	$	10,070.85
TAX LIABILITIES	$	-
ACCOUNTS PAYABLE	$	419,377.38
TOTAL	$	429,448.23

PAYROLL

March 1, 2017	$	35,106.08
March 15, 2017	$	34,074.14
March 29, 2017	$	38,420.13
TOTAL	$	107,600.35

CHECK REGISTER FOR CITY OF PLEASANT RIDGE
PAYROLL LIABILITIES
MARCH 2017

Check Date	Check	Vendor Name	Description	Amount
3/1/2017	1850	MIFOP	UNION DUES-MAR 2017	$ 188.00
3/2/2017	1851	MISDU	FOC DEDUCTIONS	$ 224.60
3/3/2017	1852	M&T BANK-ICMA - 401a	RETIRMENT CONTRIBUTIONS	$ 1,433.01
3/4/2017	1853	ICMA RETIREMENT TRUST - 457	RETIRMENT CONTRIBUTIONS	$ 1,629.79
3/15/2017	1855	MISDU	FOC DEDUCTIONS	$ 224.60
3/15/2017	1856	M&T BANK-ICMA - 401a	RETIRMENT CONTRIBUTIONS	$ 1,318.01
3/15/2017	1857	ICMA RETIREMENT TRUST - 457	RETIRMENT CONTRIBUTIONS	$ 1,638.13
3/29/2017	1863	MISDU	FOC DEDUCTIONS	$ 224.60
3/29/2017	1864	M&T BANK-ICMA - 401a	RETIRMENT CONTRIBUTIONS	$ 1,318.01
3/29/2017	1865	ICMA RETIREMENT TRUST - 457	RETIRMENT CONTRIBUTIONS	$ 1,872.10
			TOTAL PAYROLL LIABILITIES	$ 10,070.85

CITY OF PLEASANT RIDGE CHECK REGISTER
ACCOUNTS PAYABLE
MARCH 1, 2017

Check Date	Check	Vendor Name	Description	Amount
03/01/2017	21044	LIVING LAB	GAINSBOO PARK PROJECT	$ 1,000.00
03/01/2017	21020	ACCUSHRED, LLC	SHREDDING SERVICES	$ 55.00
03/01/2017	21021	ANDERSON, ECKSTEIN & WESTRICK	ENGINEERING SERVICES	$ 14,212.51
03/01/2017	21022	ARROW UNIFORM RENTAL	JANITORIAL SUPPLIES	$ 560.13
03/01/2017	21023	BADGER METER, INC.	WATER METER READING SOFTWARE UPGRADE	$ 11,110.00
03/01/2017	21024	BRILAR	DPW SERVICES	$ 54,534.04
03/01/2017	21025	CAMELOT TREE AND SHRUB CO	TREE MAINTENANCE SERVICES	$ 2,210.00
03/01/2017	21026	CHAMBERLIN PONY RIDES	DEPOSIT 10/24/17 PR HAYRIDE	$ 50.00
03/01/2017	21027	CITY OF BERKLEY	JANUARY PRISONER BOARD	$ 135.00
03/01/2017	21028	CITY OF ROYAL OAK	DPW SERVICES	$ 361.83
03/01/2017	21029	DEBORAH YARBER	RECREATION PROGRAM-PALLETS	$ 910.00
03/01/2017	21030	DETROIT EDISON COMPANY	COMMUNITY STREET LIGHTING	$ 2,961.54
03/01/2017	21031	EGT GROUP, INC	RIDGER NEWSLETTER PRINTING	$ 2,948.08
03/01/2017	21032	FERNDALE PIZZA CO., INC.	RECREATION PROGRAM SUPPLIES	$ 12.99
03/01/2017	21033	KENNETH BORYCZ	INSPECTION SERVICES	$ 1,376.25
03/01/2017	21034	LEGAL SHIELD	LEGAL SERVICES BENEFITS	$ 25.90
03/01/2017	21035	VOID CHECK	VOID CHECK	$ -
03/01/2017	21036	OAKLAND COUNTY TREASURER	NOV ELECTION RELATED SERVICES	$ 306.00
03/01/2017	21037	PLANTE & MORAN PLLC	PROFESSIONAL SERVICES - ACCOUNTING	$ 5,355.00
03/01/2017	21038	RAY KEE	INSPECTION SERVICES-FEB 2017	$ 1,350.00
03/01/2017	21039	SAMANTHA CRANE MCDANIEL	CUPCAKE WORKSHOP	$ 105.00
03/01/2017	21040	SOCRRA	REFUSE COLLECTION CONTRACT	$ 7,761.46
03/01/2017	21041	THE DAVEY TREE EXPERT COMPANY	TREE MAINTENANCE SERVICES	$ 2,200.00
03/01/2017	21042	TOSHIBA FINANCIAL SERVICES	CITY COPIER LEASES	$ 2,262.01
03/01/2017	21043	VERIZON	TELECOMMUNICATION SERVICES	$ 50.08
03/01/2017	21045	PAVEX CORPORATION	GAINSBORO PARK PROJECT	$ 19,253.00
03/01/2017	21046	NATIONAL EQUIPMENT LEASING CO	FITNESS CENTER EQUIPMENT LEASE	$ 21,901.97
			Total for 3-1-2017	$ 153,007.79

CITY OF PLEASANT RIDGE CHECK REGISTER
ACCOUNTS PAYABLE
MARCH 14, 2017

Check Date	Check	Vendor Name	Description	Amount
03/14/2017	21047	ADKISON, NEED & ALLEN P.L.L.C.	CITY ATTOREY SERVICES	$ 1,360.00
03/14/2017	21048	ARROW UNIFORM RENTAL	JANITORIAL SUPPLIES	$ 553.52
03/14/2017	21049	BLUE CROSS BLUE SHIELD OF MICHIGAN	HEALTHCARE BENEFITS	$ 23,178.97
03/14/2017	21050	BRILAR	DPW SERVICES	$ 30,601.26
03/14/2017	21051	CITY OF BERKLEY	DISPATCH SERVICES AGREEMENT	$ 3,349.61
03/14/2017	21052	CITY OF FERNDALE	FIRE SERVICES AGREEMENT - APRIL 2017	$ 21,381.72
03/14/2017	21053	CITY OF FERNDALE	REIMB BIKE ROUTE SIGNS	$ 1,511.40
03/14/2017	21054	CITY OF HUNTINGTON WOODS	LIBRARY SERVICES AGREEMENT	$ 40,597.00
03/14/2017	21055	CITY OF ROYAL OAK	FEBRUARY DPW SERVICES	$ 59.40
03/14/2017	21056	COMMUNITY MEDIA NETWORK	CITY COMMISSION MTG RECORDING	$ 200.00
03/14/2017	21057	DEBORAH GREEN	TRANSCRIPTION SERVICES	$ 50.00
03/14/2017	21058	ERADICO SERVICES INC	EXTERMINATION SERVICES	$ 102.00
03/14/2017	21059	EUGENE LUMBERG	CITY ATTORNEY SERVICES-FEB 2017	$ 406.25
03/14/2017	21060	FERNDALE YOUTH ASSISTANCE	2016-2017 ANNUAL CONTRIBUTION	$ 1,000.00
03/14/2017	21061	GREAT AMERICA FINANCIAL SRVS	TELECOMMUNICATION SERVICES	$ 433.00
03/14/2017	21062	GREAT LAKES WATER AUTHORITY	IWC CHARGES-JAN 2017	$ 429.48
03/14/2017	21063	HUNT SIGN COMPANY, LTD	STREET SIGN SUPPLIES	$ 251.00
03/14/2017	21064	JANI-KING OF MICHIGAN, INC	JANITORIAL SERVICES CONTRACT	$ 2,161.00
03/14/2017	21065	KEVIN NOWAK	UNIFORM ALLOWANCE	$ 575.00
03/14/2017	21066	LOUIS-PIERRE RICH	REPLACEMENT OF CH 1674001734	$ 144.74
03/14/2017	21067	MELANIE SEVALD	RECREATION PROGRAM	$ 784.00
03/14/2017	21068	MICH DEPT OF TRANSPORTATION	TRAFFIC SIGNAL ENERGY CHARGES	$ 86.94
03/14/2017	21069	NOVA CONSULTANTS INC	4 RIDGE LIGHTING UPGRADES	$ 10,165.00
03/14/2017	21070	O'REILY AUTO PARTS	POLICE VEHICLE SUPPLIES	$ 53.90
03/14/2017	21071	OAKLAND COUNTY ROAD COMMISSION	TRAFFICE SIGNAL MAINTENANCE	$ 825.55
03/14/2017	21072	OAKLAND COUNTY TREASURERS	SEWERAGE TREATMENT FEB 2017	$ 46,527.17
03/14/2017	21073	OAKLAND SCHOOLS	UTILITY BILL PRINTING AND MAILING	$ 593.55
03/14/2017	21074	SAFEBUILT	CODE ENFORCEMENT SERVICES	$ 660.00
03/14/2017	21075	SCHEER'S ACE HARDWARE	BUILDING & PARK MAINTENANCE SUPPLIES	$ 135.22
03/14/2017	21076	SOCRRA	REFUSE COLLECTION CONTRACT	$ 8,706.00
03/14/2017	21077	SOCWA	WATER PURCHASES FEB 2017	$ 11,248.03
03/14/2017	21078	THE DAVEY TREE EXPERT COMPANY	TREE MAINTENANCE SERVICES & STORM DAMAG	$ 1,200.00
03/14/2017	21079	USZTAN CONSTRUCTION	POPLAR PARK STEETSIGN REPLACEMENT	$ 975.00
03/14/2017	21080	VICTORIA DICKINSON	RECREATION PROGRAM	$ 32.00
03/14/2017	21081	WEB MATTERS BY KRISTIE	WEBSITE HOSTING SERVICES	$ 24.95
03/14/2017	21082	WEX BANK	FUEL PURCHASES	$ 1,242.57
03/14/2017	21083	WOODWARD AVENUE ACTION ASSOC.	2016-2017 MEMBERSHIP DUES	$ 1,250.00
			Total for 3-14-2017	$ 212,855.23

CITY OF PLEASANT RIDGE CHECK REGISTER
ACCOUNTS PAYABLE
MARCH 30, 2017

Check Date	Check	Vendor Name	Description	Amount
03/30/2017	21084	ALBANA KOKA	HISTORICAL MUSEUM CLEANING	$ 50.00
03/30/2017	21085	ANDERSON, ECKSTEIN & WESTRICK	ENGINEERING SERVICES-GAINSBORO	$ 707.40
03/30/2017	21086	AQUATIC SOURCE	MARCITE DEPOSIT	$ 46,613.00
03/30/2017	21087	ARROW UNIFORM RENTAL	MAT RENTAL AND JANITORIAL SUPPLIES	$ 560.13
03/30/2017	21088	BADGER METER, INC.	REPLACEMENT TRANSPONDERS	$ 810.03
03/30/2017	21089	BRILAR	DPW CONTRACTED SERVICES	$ 16,960.92
03/30/2017	21090	CITY OF PLEASANT RIDGE-GENERAL	CITY UTILITY SERVICES	$ 523.58
03/30/2017	21091	DETROIT EDISON COMPANY	COMMUNITY LIGHTING	$ 3,010.03
03/30/2017	21092	FERNDALE PIZZA CO., INC.	MEETING SUPPLIES	$ 33.89
03/30/2017	21093	G2 CONSULTING GROUP	2016 CONCRETE PROGRAM	$ 10,438.75
03/30/2017	21094	J & J AUTO TRUCK CENTER	POLICE CAR MAINTENANCE AND REPAIRS	$ 463.49
03/30/2017	21095	LEGAL SHIELD	PRE PAID LEGAL SERVICES	$ 25.90
03/30/2017	21096	MICHELLE DELACOURT	2017 SPRING RIDGER	$ 360.00
03/30/2017	21097	NYE UNIFORM	UNIFORM PURCHASES-FEARN & KOLEZAR	$ 270.95
03/30/2017	21098	PAM KAMPF	PILATES CLASS	$ 232.00
03/30/2017	21099	PETER HUNT	REPLACEMENT CHECK #1674001674	$ 35.68
03/30/2017	21100	PLANTE & MORAN PLLC	ACCOUNTING SERVICES MARCH 2017	$ 5,355.00
03/30/2017	21101	PSYCHOLOGICAL SYSTEMS, INC.	PSYCHOLOGICAL - POLICE	$ 750.00
03/30/2017	21102	RAY KEE	BUILDING INSPECTOR SERVICES - MAR 2017	$ 1,350.00
03/30/2017	21103	SAMANTHA CRANE MCDANIEL	CUPCAKE WORKSHOP	$ 260.00
03/30/2017	21104	SIR SPEEDY	OFFICE SUPPLIES	$ 247.50
03/30/2017	21105	SOCRRA	SPECIAL COLLECTION SERVICES - FEB. 2017	$ 7,761.46
03/30/2017	21106	TASER INTERNATIONAL	POLICE DEPARTMENT SUPPLIES	$ 495.98
03/30/2017	21107	THE DAVEY TREE EXPERT COMPANY	DPW SERVICES - TREE REMOVAL	$ 1,670.00
03/30/2017	21108	UNUM LIFE INSURANCE COMPANY	HEALTH CARE BENEFITS	$ 156.00
03/30/2017	21109	VERIZON	WIRELESS SERVICES	$ 50.08
03/30/2017	21110	WEB MATTERS BY KRISTIE	MONTHLY WEBSITE HOSTING - APRIL 2017	$ 24.95
03/30/2017	21111	WETMORE TIRE AND AUTO	POLICE VEHICLE MAINTENANCE	$ 608.08
			Total for 3-30-2017	$ 99,824.80

CITY OF PLEASANT RIDGE CHECK REGISTER
ACCOUNTS PAYABLE
Electronic Payments & P-Card Transactions

Check Date	Check	Vendor Name	Description	Amount
03/13/2017	755	ADOBE SYSTEMS INC	SOFTWARE MAINTENANCE	$ 15.89
03/13/2017	756	ADOBE SYSTEMS INC	SOFTWARE MAINTENANCE	$ 52.99
03/13/2017	757	AMIERCA IN BLOOM	MEMBERSHIP FEES	$ 1,099.00
03/13/2017	758	AT&T MOBILITY	WIRELESS SERVICE	$ 47.82
03/13/2017	759	CRAIN'S DETROIT BUSINESS	SUBSCRIPTION SERVICES	$ 89.00
03/13/2017	760	DTE ENERGY	UTILITIES SERVICES	$ 2,390.97
03/13/2017	761	FERNDALE PIZZA CO., INC.	MEETING SUPPLIES	$ 42.04
03/13/2017	762	HOME DEPOT CREDIT SERVICES	BUILDING AND MAINTENANCE SUPPLIES	$ 110.75
03/13/2017	763	INTERMEDIA.NET INC.	TELECOMMUNICATION SERVICES	$ 105.88
03/13/2017	764	JAX KAR WASH	POLICE VEHICLE MAINTENANCE	$ 479.52
03/13/2017	765	MAMC	CLERKS INSTITUTE TUITION	$ 600.00
03/13/2017	766	MICHIGAN MUNICIPAL LEAGUE	MEMBERSHIP DUES	$ 110.00
03/13/2017	767	POSTMASTER	POSTAGE REPLENISHMENT	$ 100.00
03/13/2017	768	POTBELLYS SANDWICH SHOP	MEETING SUPPLIES	$ 87.61
03/13/2017	769	QMI GROUP INC	PLANNING COMMISSION NAMEPLATES	$ 140.00
03/13/2017	770	STAMPS.COM	MONTHLY SERVICE CHARGES	$ 315.84
03/13/2017	771	WASHINGTON POST	SUBSCRIPTION SERVICES	$ 50.00
03/13/2017	772	WOW! BUSINESS	TELECOMMUNICATION SERVICES	$ 271.18
03/13/2017	773	XFER COMMUNICATIONS	COMPUTER SUPPORT & BACKUP SERVICES	$ 876.00
03/29/2017	714	ADOBE SYSTEMS INC	SOFTWARE MAINTENANCE	$ 15.79
03/29/2017	715	ADOBE SYSTEMS INC	SOFTWARE MAINTENANCE	$ 52.99
03/29/2017	716	AMAZON.COM	OFFICE FLOORING SUPPLIES	$ 504.48
03/29/2017	717	AT&T MOBILITY	WIRELESS SERVICES	$ 47.82
03/29/2017	718	BED BATH AND BEYOND	MEETING SUPPLIES	$ 37.97
03/29/2017	719	BOSTICK TRUCK CENTER	WINTER SERVICES SUPPLIES	$ 1,000.00
03/29/2017	720	COMCAST	TELECOMMUNICATION SERVICES	$ 261.57
03/29/2017	721	DTE ENERGY	UTILITIES SERVICES	$ 3,573.18
03/29/2017	722	HP OFFICE SUPPLIES	PRINTER SUPPLIES	$ 408.96
03/29/2017	723	INTERMEDIA.NET INC.	TELECOMMUNICATION SERVICES	$ 107.19
03/29/2017	724	ISCG WORKPLACE DESIGN &	BUILDING MAINTENANCE	$ 16,559.62
03/29/2017	725	PERFECT WATER	FITNESS CENTER SUPPLIES	$ 39.95
03/29/2017	726	POSTMASTER	POSTAGE REPLENISHMENT	$ 122.95
03/29/2017	727	POTBELLYS SANDWICH SHOP	MEETING SUPPLIES	$ 94.76
03/29/2017	728	QUILL CORPORATION	OFFICE SUPPLIES	$ 360.81
03/29/2017	729	SAFETYSIGNS.COM	GAINSBORO PARK PROJECT	$ 471.52
03/29/2017	730	SITE ONE LANDSCAPE SUPPLY	WINTER MAINTENANCE SUPPLIES	$ 50.88
03/29/2017	731	STAMPS.COM	MONTHLY SERVICE CHARGES	$ 15.99
03/29/2017	732	SURVEY MONKEY	SOFTWARE SUBSCRIPTION SERVICES	$ 300.00
03/29/2017	733	VISTAPRINT	BUISNESS CARDS-METZGER	$ 36.01
03/29/2017	734	WEX BANK	FUEL PURCHASES	$ 15.82
03/29/2017	735	WOW! BUSINESS	TELECOMMUNICATION SERVICES	$ 271.18
03/29/2017	736	XFER COMMUNICATIONS	CONTRACT COMPUTER SUPPORT	$ 845.00
03/31/2017	694	5TH 3RD	RECREATION PROGRAM SUPPLIES	$ 809.56
03/31/2017	695	QUILL CORPORATION	OFFICE SUPPLIES	$ 346.31
03/31/2017	696	5TH 3RD	RECREATION, PROGRAM & OFFICE SUPPLIES	$ 14,670.10
03/31/2017	697	ADOBE SYSTEMS INC	SOFTWARE MAINTENANCE	$ 15.89
03/31/2017	698	ADOBE SYSTEMS INC	SOFTWARE MAINTENANCE	$ 52.99
03/31/2017	699	AMAZON.COM	OFFICE SUPPLIES	$ 281.90
03/31/2017	700	AT&T MOBILITY	WIRELESS SERVICES	$ 47.82
03/31/2017	701	COMCAST	TELECOMMUNICATION SERVICES	$ 261.42
03/31/2017	702	HOME DEPOT CREDIT SERVICES	BUILDING MAINTENANCE SUPPLIES	$ 96.32
03/31/2017	703	INTERMEDIA.NET INC.	TELECOMMUNICATION SERVICES	$ 108.38
03/31/2017	704	MIDWEST ENGRAVING	ENGRAVED BRICK ORDER	$ 1,082.00
03/31/2017	705	PERFECT WATER	FITNESS CENTER SUPPLIES	$ 39.95
03/31/2017	706	POSTMASTER	POSTAGE REPLENISHMENT	$ 100.00
03/31/2017	707	QMI GROUP INC	MEMORIAL TREE PLAQUE	$ 110.00
03/31/2017	708	SCHOOLCRAFT COLLEGE	POLICE DEPARTMENT TRAINING	$ 200.00
03/31/2017	709	STAMPS.COM	MONTHLY SERVICE CHARGES	$ 15.99
03/31/2017	710	TARGET STORES	JANITORIAL SUPPLIES	$ 74.19
03/31/2017	711	WESTLAND LAWN AND SNOW	DPW EQUIPMENT & SUPPLIES	$ 1,917.93
03/31/2017	712	WOW! BUSINESS	TELECOMMUNICATION SERVICES	$ 271.18
03/31/2017	713	XFER COMMUNICATIONS	NETWORK BACKUP SERVICES	$ 833.50
			Total for Electronic Payments	$ 53,514.36

City of Pleasant Ridge
23925 Woodward Avenue
Pleasant Ridge, Michigan 48069

RESOLUTION
Teacher Appreciation Week
May 1 – May 5, 2017

WHEREAS, teachers mold future citizens through guidance and education; and

WHEREAS, teachers encounter students of widely differing backgrounds; and

WHEREAS, our country's future depends upon providing quality education to all students; and

WHEREAS, teachers spend countless hours preparing lessons, evaluating progress, counseling and coaching students and performing community service; and

WHEREAS, our community recognizes and supports its teachers in educating the children of this community.

NOW, THEREFORE, BE IT RESOLVED that the Pleasant Ridge City Commission proclaims May 1 - May 5, 2017, to be TEACHER APPRECIATION WEEK; and

BE IT FURTHER RESOLVED that the Pleasant Ridge City Commission strongly encourages all members of our community to join with it in personally expressing appreciation to our teachers for their dedication and devotion to their work.

Signed this 18th day of April 2017, in the City of Pleasant Ridge
State of Michigan in witness whereof of the official seal
and signature of the city.

_____
Kurt Metzger, Mayor

SEVENTH-DAY ADVENTIST CHURCH

Michigan Conference Headquarters

PO Box 24187
Lansing MI 48909-4187
320 West St Joseph
Lansing MI 48933-2339
Telephone: (517) 316-1500
Fax: (517) 316-1501
Website: www.misda.org

To whom it may concern,

I write today regarding evangelistic work that the Family Health and Education Resources ministry of the Seventh-day Adventist Church will soon be conducting in your community. Student literature evangelists will soon be going door-to-door distributing free religious literature, praying with community members, enrolling interested individuals in Bible Studies, and seeking donations to support the program.

The Literature evangelistic program of the Adventist Church has been in existence for well over 100 years and is an important part of the Church's missionary work and evangelism. As student literature evangelists they are following the Great Commission that Christ gave his followers in Matthew 28:18-20.

In order not to disturb the community or be bothersome this program usually runs from 10:00am to 9:00pm, June 4 – August 11. Further, all of our students carry identification recognizing them as part of the Family Health and Education Resources Program. They also carry radios or cell phones to contact their onsite leader who can provide more information while in the field.

Some communities have ordinances governing door-to-door sales, canvassing or solicitations. However, the Supreme Court has protected door-to-door advocacy based upon the free exercise and speech clauses of the First Amendment. The Court has been particularly suspicious of any prior restraint on these activities such as requiring permit or registration process. If your city has an ordinance that it believes applies to our activities I ask that you contact us as soon as possible so we can discuss this.

We believe our evangelistic activities fall squarely within the protected zone of the First Amendment. Unless we hear differently we do not plan on applying for any permit or registering prior to beginning our missionary work.

It is our desire to work with local communities to avoid any potential problems. We are happy to provide more specific information regarding the program if you desire.

We look forward to working in your community and with your office as necessary.

PLEASE FORWARD THIS INFORMATION TO YOUR LOCAL POLICE/SHERIFF DEPARTMENT.

City of Pleasant Ridge

Scott Pietrzak, Assistant City Manager

From: Scott Pietrzak, Assistant City Manager

To: Mayor and City Commission

Date: April 18, 2017

Re: City Foundation Auction Donations

Each year, the City donates certain items to the Pleasant Ridge Foundation for its Annual Auction, the most valuable being the buildings for storage of certain items, as well as a place to hold their event. Listed below are the items being considered this year, although this should not be considered all inclusive:

2	Community Center Rental (**residents only**)	$200.00
1	Summer Fun Package (**residents only**) *5 pool guest passes, $20 concession stand credit,* *2 free swim lessons, 1 Summer Program registration*	$220.00
1	Private Pool Party for 10 (**resident only - between 8p and 9p**)	$300.00
2	Name-A-Street (signs are paid for by Foundation)	priceless
1	Police Ride Along	priceless
1	Reserved lounge chair at the pool May 29 to September 4, 2017 (**residents only**)	priceless

The dollar value of the items is not great, but when you combine it with the value of employee time and the DPW building and Gainsboro Shelter, the amount is one that should be approved and recognized by the City Commission.

The relationship between the Pleasant Ridge Foundation and the City is truly a partnership. Profits from the Foundation's Annual Auction allows for purchases such as trees, playground equipment and other items that help provide the quality of life in Pleasant Ridge.

Of course, the Foundation has been impacted by the slow economy, as has every charity over the past few years, but the Trustees are always creating new events to generate interest of new residents. I will continue to do whatever necessary to promote and support the Auction on behalf of the City.

This fundraiser continues to be an excellent way to raise funds for the benefit of the community. Further, it is another way to promote and nurture the 'community' spirit in Pleasant Ridge.

Therefore, I recommend the City Commission approve the proposed donations to the Pleasant Ridge Foundation for its 2017 Auction event, "Rockin' the Ridge" to be held May 20th.

Please feel free to contact me should you wish to discuss this matter further.

City of Pleasant Ridge

James Breuckman, City Manager

From: Jim Breuckman, City Manager

To: City Commission

Date: April 13, 2017

Re: 2017 City Commission Goals and Objectives Adoption

Overview

The attached Goals and Objectives are a statement of the City Commission's priorities in governance for the coming year.

Background

The City Commission has been working on the attached Goals and Objectives statement over the past few months. This statement of Goals and Objectives will stand as a communication of what this City Commission wishes to accomplish. These Goals and Objectives will also be included in the City's upcoming FY17-18 budget document.

Being included in the budget document means that these Goals and Objectives will serve as a basis for making budget decisions and work priorities for City Staff over the coming year. When considering various projects and funding decisions during the budget process, the City Commission may evaluate the various options and determine which ones to fund based on how well each project or line item aligns with the Goals and Objectives statement.

Requested Action

City Commission consideration of adoption of the attached 2017 Goals and Objectives statement.

City of Pleasant Ridge

Annual Goals and Objectives 2017

Note that the order in which these goals are presented is not intended to convey importance.

A. Maintain a Safe and Secure Community

Objectives:

1. Preserve effective levels of police staffing and equipment to ensure high quality public safety service delivery.
2. Maintain or improve existing fire/EMS service delivery.
3. Review any strategies possible to improve police, fire/EMS, and dispatch service.
4. Implement traffic calming measures where necessary to ensure appropriate vehicle travel speeds.
5. Preserve and enhance Neighborhood Watch program.

B. Ensure Good Stewardship of Municipal Infrastructure

Objectives:

1. Continue the City's ongoing street reconstruction program.
2. Implement a continuing maintenance program for previously reconstructed streets and alleys to extend their useful life.
3. Implement continuing maintenance and monitoring program for previously rehabilitated combined sewers to extend their useful life.
4. Improve bike and pedestrian infrastructure (sidewalks) throughout the City.
5. Complete capital projects identified in the Capital Improvements Plan.
6. Work with local transit authorities to improve existing bus stops.

C. Maintain Financial Sustainability

Objectives:

1. Maintain a competitive property tax rate position relative to other cities in the region.
2. Achieve and maintain an unrestricted fund balance of 20-25% and a total fund balance of 25-30% of annual general fund expenses.
3. Maintain a capital outlay reserve of 75% to 100% of expenditures in the Water and Sewer Enterprise Fund.
4. Continue to explore other revenue sources. Aggressively identify and pursue grant opportunities.
5. Increase funding for the defined benefit pension to reduce the City's unfunded liability.
6. Maintain property values by preserving Pleasant Ridge's status as a first class community.

D. Maintain Excellent Parks and Recreation Program

Objectives:

1. Improve park space behind the Community Center.
2. Complete necessary maintenance tasks at the community center, pool, and parks.
3. Achieve excellence in the offering and delivery of recreation services to residents of all ages.
4. Encourage active, healthy lifestyles for City residents.
5. Continue incremental facility upgrades at the wellness and community center.

E. Preserve and Enhance Community and Neighborhood Character

Objectives:

1. Improve City code enforcement efforts to effectively preserve the character of the City's neighborhoods.
2. Protect the City's established historic character from destruction or erosion by inappropriate additions or modifications to existing buildings, or inappropriate construction of new buildings.
3. Work to influence future changes and enhancements to Woodward Avenue to reflect Pleasant Ridge's preferred plan.
4. Ensure that planning, development, and infrastructure projects enhance Pleasant Ridge as a walkable, bikeable community.

F. Foster Community Trust and Participation

Objectives:

1. Use a variety of outlets, including the City's website, traditional media, social media, town hall meetings, and the Ridger to inform and engage residents.
2. When more than one feasible choice exists for issues of major consequence, consult or collaborate with residents prior to making decisions.
3. Encourage, support, and recognize volunteers and community members who do good work in the community.
4. Conduct a statistically valid community survey at least bi-annually to measure City performance in delivering services and public sentiment on important issues facing the community.
5. Support resident-driven and managed initiatives.

G. Strive for Excellence in Governance

Objectives:

1. Develop and maintain a first-rate workforce by supporting the continued training and professional development for City employees.
2. Continue to pursue excellence in customer service by exploring alternative methods for improving delivery of services.
3. Facilitate increased use of technology during City meetings.
4. Continue to look for new ways to partner with nearby communities or private partners to improve the delivery of City services.
5. Continually evaluate and adjust the City's goals and objectives, Master Plan, Recreation Master Plan, and Capital Improvements Plan to ensure that policy decisions are being made that further the long-term interest of the City.

H. Protect the Environment

Objectives:

1. Reduce the City's carbon footprint through energy conservation, efficiency, and renewable generation measures.
2. Invest in maintaining the City's tree canopy by maintaining existing trees and planting new trees to fill gaps.
3. Explore ways to incorporate green infrastructure to infiltrate stormwater in place and reduce the amount of runoff that enters the City's sewer system.

City of Pleasant Ridge

James Breuckman, City Manager

From: Jim Breuckman, City Manager

To: City Commission

Date: April 13, 2017

Re: Iron Ridge Development Brownfield Plan Introduction

Overview

The former ePrize and Walker Wire buildings have been acquired by a new owner who is proposing to make substantial improvements to the entire complex of buildings, with the total planned investment being $25-$30 million dollars. Being former industrial sites, there are environmental issues that will be cleaned up as part of the project. The developer is proposing to create a Brownfield Tax Increment Financing vehicle to assist in financing the cleanup of the sites as they are redeveloped.

Attached to this memo are supplementary files:

1. Property Overview Map
2. Proposed site plan and renderings of major building and site improvements
3. Table 1 – Eligible environmental cleanup activities
4. Table 2 – Pleasant Ridge TIF Capture table
5. Brownfield Plan Review by ASTI
6. Draft brownfield plan (includes the above three items, which have been pulled out as separate items in this package for ease of review)

Background

Existing Conditions

Refer to the property map attachment for the following overview.

The Iron Ridge development site includes the former ePrize building, the Walker Wire complex, and other properties along Bermuda Street. The project is generally bounded by 10 Mile, the railroad tracks, and Bermuda Street. The project is in both Ferndale and Pleasant Ridge, with the boundary line between the two cities running north-south near the east side of the Walker Wire building.

Attachment 1 is a property map. On that map, parcels 25-27-127-009, 25-27-127-010, and 25-27-127-012 are in Pleasant Ridge with the rest of the properties being in Ferndale. Eprize Drive is a public street owned by Pleasant Ridge.

Hello World (the rebranded name for ePrize) moved out of the building on parcel 25-27-127-009 about 18 months ago, leaving the Pleasant Ridge properties entirely vacant at now and for the past 18 months.

Proposed Project

Attachment 2 is the preliminary site plan for the development and includes renderings for two of the major improvements that are proposed – the brew house and beer garden area proposed for the southern portion of the old Walker Wire building, and the new apartments that are proposed along the east side of Bermuda in Ferndale. The total project includes about 231,000 square feet of floor area.

The project will include a variety of uses that will activate the site and provide a destination for a variety of work, shopping, service, fitness, and entertainment uses. The proposed site mix will make this more of a community destination/anchor than it has been in the past, when it was solely office and industrial space.

No new buildings are proposed in Pleasant Ridge. The development activities in Pleasant Ridge will be focused on the transformation and re-use of the existing buildings. The proposed uses shown on the draft site plan are permitted uses in the Workplace zoning district. As such, no site or special use approvals are required for development activities. The proposed development would require City Commission approval for liquor licenses at the site under our liquor license ordinance.

The site has excellent access to the regional and local street network. Bermuda provides access to the site from the north and south. Traffic from Woodward can access the site from the I-696 service drive, while traffic coming from I-696 can use either the Woodward or Hilton exits to get to the site via the service drive. The proposed development, being located on the east side of the railroad tracks and having no connection to the local street network in Pleasant Ridge, will not create any traffic impacts on our local streets.

One potential drawback is that there is also limited pedestrian access to the site from Pleasant Ridge, although our residents will be able to easily reach the site by car, or by bicycle using Woodward Heights and Bermuda, which are part of a regional bike route and have experienced or have the potential for further bike lane improvements.

The developer will provide a more detailed overview of the proposed uses and development highlights at the April 18 meeting.

Overview of Environmental Issues

For an overview of the environmental issues present at the site, refer to attachment 6, which is the entire draft brownfield plan. The environmental issues are summarized on pages 7 through 9 of the plan (pages 9-11 of the .pdf document), and described in detail in the baseline environmental assessment on pages 23-97 of the .pdf document. The sites contain a variety of soil and groundwater contaminants from the past industrial activities, and asbestos is present in the buildings. The environmental issues at the sites currently exceed State standards for residential or nonresidential cleanup.

The proposed brownfield remediation activities include bringing the site into compliance with state standards, will abate the asbestos issues, and installing vapor barriers in the buildings to prevent vapor intrusion from the underlying soil entering the buildings.

All three of the parcels in Pleasant Ridge qualify as “facilities” under State brownfield legislation, which means that eligible environmental cleanup activities undertaken by the developer can be reimbursed through incremental post-development tax capture. The tax increment financing concept is described in more detail in the next section.

Attachment 3 lists the eligible activities that may be reimbursed through a brownfield TIF. The table shows that there is a total of $2,576,716 of environmental remediation work that can be reimbursed in Pleasant Ridge. There is a total of $3,986,011 that can be reimbursed from eligible activities in Ferndale. That reimbursement will come from TIF capture generated by the Ferndale parcels.

Tax Increment Financing (TIF) Overview

TIF is a financing method that is used for brownfield projects, and for other public entities such as Downtown Development Authorities (DDAs). The City of Pleasant Ridge DDA is an existing TIF body that has used TIF financing for over two decades.

A TIF captures the increased property tax revenues from a defined geographic area for a defined period and for a specific purpose. When a TIF is created, the year in which it is created serves as the baseline year and the taxable value in the baseline year is set as the baseline taxable value. The various taxing jurisdictions (i.e. the City, Oakland County, the Ferndale School District, etc.) continue to collect property taxes on the baseline taxable value.

In subsequent years, when the taxable value increases due to either natural increases or new development, the increased tax revenue is captured by the TIF authority. In the case of a brownfield, the increased tax revenue is captured and distributed to the developer who incurred the environmental cleanup costs.

Once the TIF expires, all tax revenues are again collected by the various taxing jurisdictions.

The following table shows a simplified example of how a TIF would work for a development that incurred $1,000,000 of environmental costs and that extended for 25 years.

	Year 0	**Years 1-25**	**Years 26+**
Baseline Taxable Value	$100,000	$100,000	$100,000
- New Taxable Value	$500,000	$500,000	$500,000
= Taxable Value Increment	$400,000	$400,000	$400,000
Taxes Generated on Baseline Taxable Value	$10,000	$10,000	$10,000
Taxes Generated on Taxable Value Increment	$0	$40,000	$40,000
Taxes Collected by City	$10,000	$10,000	$50,000
Taxes to Developer to Reimburse Environmental Costs	$0	$40,000	$0

Refer to attachment 4 for a much more involved table that shows the TIF capture associated with the Pleasant Ridge portion of the brownfield plan for this project.

Financial Need

A brownfield TIF is a vehicle to reimburse a private developer for environmental cleanup work. It is, at its most basic, a public subsidy to support a private project. It is therefore incumbent upon the City to ensure that the project and the requested brownfield TIF meets the “but-for” test, where the project would not be viable but-for the TIF capture.

There are a few different ways to evaluate project need. One common way is to use a project pro forma excel workbook that the MEDC uses to evaluate projects that are seeking MEDC grants or subsidies. Many brownfield authorities key in on the Internal Rate of Return (IRR) calculation, and use this number to evaluate whether the project needs public subsidy or not. Most brownfield authorities do not set or publish a big bright line IRR percentage, but rather use the IRR calculation as a guidepost for evaluating the project.

We requested that the developer complete the MEDC pro forma workbook and provide it to us. They did so, and we asked them to revise it based on our initial review. The revised pro forma shows that this project has an IRR of 7.01%.[1] This is on the lower side, and demonstrates that a public subsidy is most likely necessary for the project to be viable. Without the TIF capture, it is unlikely that the development would occur, and in that case, there would be no development, no increased taxable value, and the City would continue collecting only the baseline taxes without any future prospect of increased tax base.

Given that the necessity of the public subsidy is apparent, the next question is, does the City like the project? Staff believes that the project is well thought out, and will turn the site into something that the entire community can benefit from and use. The City Commission must come to its own conclusion on the matter, but Staff is supportive of the project.

Brownfield Plan Approval

Brownfield plans can be approved by any Brownfield Redevelopment Authority (BRA) with jurisdiction over a site. The site is located in Pleasant Ridge, Ferndale, and Oakland County. Ferndale and Oakland County have BRAs, but Pleasant Ridge does not. This leaves two possible options to approve a brownfield plan:

1. Use the Oakland County BRA to approve a joint brownfield plan for PR and Ferndale
2. Create a BRA in Pleasant Ridge and have PR and Ferndale each approve a local brownfield plan.

After meeting and consulting with our environmental consultant, Ferndale Staff, and Oakland County Staff, we are recommending that we use the Oakland County BRA to approve a joint brownfield plan for the development. Oakland County would then administer the tax capture and reimbursement to the developer.

To facilitate this process, the City Commission must pass a resolution concurring with the provisions of the brownfield plan, and authorizing the Oakland County BRA to approve and implement the plan. We have completed our initial review of the brownfield plan with our brownfield consultant (review is attached to this memo as attachment 5) and the developer's consultant will be revising the plan accordingly.

It is our intent to bring an approvable brownfield plan and resolution to the City Commission for consideration at the May 9 meeting.

Requested Action

No action is requested now. Staff will continue to work out the details of the brownfield plan with Oakland County and the developer, and will bring this item back to the City Commission at an upcoming meeting. At that time the requested action will be for the City Commission to authorize the Oakland County Brownfield Authority to approve a brownfield plan and TIF capture for the Iron Ridge site.

[1] The pro forma is an excel workbook with multiple spreadsheets and does not lend itself to inclusion in the agenda packet. Any interested party can review the workbook at City Hall.

Property Map

2 Foot Contours
5 Foot Contours
FEMA Base Flood Elevations
FEMA Cross Sections
100 yr - FEMA Floodplain
100 yr (detailed) - FEMA Floodplain
500 yr - FEMA Floodplain
FLOODWAY - FEMA Floodplain

OAKLAND COUNTY MICHIGAN
Economic Development & Community Affairs

L. Brooks Patterson
Oakland County Executive

Date Created: 4/25/2016

NORTH

1 inch = 200 feet

Oakland County One Stop Shop 2100 Pontiac Lake Road Bldg. 41 West Waterford, MI 48328 Phone: 248-858-0721 Web: www.advantageoakland.com

Iron Ridge Flat Plan

1" = 50'-0"

Area Square Footage Calculations

Long Market-	31,582 sq. ft.
Iron Row North Apartments-	27,647 sq. ft.
North Tech.-	24,443 sq. ft.
Fire Rover-	24,236 sq. ft.
South Tech.-	19,282 sq. ft.
Tower Office-	18,757 sq. ft.
Pulse Fitness-	15,454 sq. ft.
Detroit Air Compressor-	11,524 sq. ft.
Brew House-	9,789 sq. ft.
Beer Garden-	7,625 sq. ft.
Venue-	7,343 sq. ft.
North Anchor-	6,877 sq. ft.
NE Office-	4,983 sq. ft.
Transition-	4,857 sq. ft.
Personnel Building-	1,110 sq. ft.

Demo Square Footage Calculations

DEMO 1-	2,609 sq. ft.
DEMO 2-	7,111 sq. ft.
DEMO 3-	129 sq. ft.
DEMO4-	2,277 sq. ft.
TOTAL SQ. FT. =	12,126 sq. ft.

Total Parking Available On Site

PARKING AVAILABLE = 626 SPACES

krieger klatt ARCHITECTS
architecture interiors consulting
1412 E. 11 Mile Rd. | Royal Oak, MI 48067
P: 248.414.9270 F: 248.414.9275
www.kriegerklatt.com

Client:
Iron Ridge Holdings, LLC
520 N Main
Royal Oak, MI 48067

Project:
Iron Ridge - Flat Plan

Issued	Description	By
12-28-2016	Flat Plan	EM

PRELIMINARY NOT FOR CONSTRUCTION

Seal:

Note:
Do not scale drawings. Use calculated dimensions only. Verify existing conditions in field.

North Arrow:
North

Sheet Title:
Iron Ridge Flat Plan

Project Number:
16-181

Sheet Number:
A.101

PM Project No. 01-07985-0
Location: Proposed Ironridge Campus,
Ferndale and Pleasant Ridge, Michigan

Photograph 1

Project Concept Overview Photo

Photograph 2

Proposed Apartment Complex

PM Project No. 01-07985-0
Location: Proposed Ironridge Campus,
Ferndale and Pleasant Ridge, Michigan

Photograph 3

Proposed Apartment Complex

Photograph 4

Proposed Campus (Brewery in front, apartments in back)

PM Project No. 01-07985-0
Location: Proposed Ironridge Campus,
Ferndale and Pleasant Ridge, Michigan

Photograph 5

Proposed Brewery (Exterior)

Photograph 6

Brewery Bar Area

PM Project No. 01-07985-0
Location: Proposed Ironridge Campus,
Ferndale and Pleasant Ridge, Michigan

Photograph 7

Brewery (Interior rendering)

Photograph 8

Proposed Office Building

Table 1: Ironridge, Ferndale/Pleasant Ridge Eligible Activities Cost Estimates 4.5.17

Item/Activity	Total Request	MDEQ Act 381 Eligible Activities - Ferndale	MSF Act 381 Eligible Activities - Ferndale	MDEQ Act 381 Eligible Activities - Pleasant Ridge	MSF Act 381 Eligible Activities - Pleasant Ridge
Baseline Environmental Assessments					
Phase I ESA	$ 7,000	$ 4,900		$ 2,100	
Phase II ESA/BEA/DDCC	$ 76,640	$ 32,305		$ 44,335	
Baseline Environmental Assessments Sub-Total	**$ 83,640**	**$ 37,205**	**$ -**	**$ 46,435**	**$ -**
Due Care Activities					
Vapor Barrier Design and Installation					
Design	$ 10,000	$ 5,000		$ 5,000	
Oversight	$ 36,000	$ 18,000		$ 18,000	
Vapor Evaluation, Reporting 4 Quarters	$ 150,000	$ 75,000		$ 75,000	
Western Building Installation (Proposed Fitness Center)	$ 67,500	$ -		$ 67,500	
Eastern Building Installation (Former Walker Wire)	$ 450,000	$ 135,000		$ 315,000	
Southern Building Installation (3155 Bermuda St)	$ 80,000	$ 80,000		$ -	
Contaminated Soil Removal, Transport and Disposal					
PCB Remediation Activities 404 10 Mile (5,720 Tons)	$ 991,000			$ 991,000	
PCB Remediation Activities Walker Wire Bldg (2100 Tons)	$ 357,000	$ 357,000		$ -	
Contaminated Soil Transport and Disposal associated with Development Activities (1500 Tons)	$ 163,000	$ 81,500		$ 81,500	
Groundwater Management	$ 107,750	$ 53,875		$ 53,875	
Oversight, Sampling and Reporting by Environmental Professional	$ 110,000	$ 55,000		$ 55,000	
Removal of USTs if encountered	$ 10,000	$ 5,000		$ 5,000	
Due Care Activities Sub-Total	**$ 2,532,250**	**$ 865,375**	**$ -**	**$ 1,666,875**	**$ -**
Demolition					
Predemolition Audit or Survey	$ 20,000		$ 10,000		$ 10,000
Building Demolition	$ 300,000		$ 150,000		$ 150,000
Dewatering During Foundation Removal	$ 20,000		$ 10,000		$ 10,000
Fill/Compaction/Rough Grading to Balance Site Where Building was Located	$ 10,000		$ 2,500		$ 7,500
Removal of Abandoned Utilities	$ 200,000		$ 100,000		$ 100,000
Removal of Parking Lots/Sidewalks/Curbs/Gutters	$ 200,000		$ 100,000		$ 100,000
Fill/Compaction/Rough Grading to Balance Site Where Site Improvements were Located	$ 100,000		$ 50,000		$ 50,000
Fees related to Demolition Engineering and Design	$ 70,000		$ 35,000		$ 35,000
Demolition Sub-Total	**$ 920,000**	**$ -**	**$ 457,500**	**$ -**	**$ 462,500**
Asbestos Activities					
Asbestos Survey	$ 20,000	$ 10,000		$ 10,000	
Asbestos Abatement, Oversight, Air Monitoring and Reporting	$ 100,000		$ 50,000		$ 50,000
Asbestos Activities Sub-Total	**$ 120,000**	**$ 10,000**	**$ 50,000**	**$ 10,000**	**$ 50,000**
Infrastructure Improvements					
Urban Storm water Management System	$ 250,000		$ 250,000		
Sidewalks	$ 100,000		$ 100,000		
Curbs and Gutters	$ 50,000		$ 50,000		
Roads	$ 250,000		$ 250,000		
Public Lighting	$ 100,000		$ 100,000		
Public Signage	$ 50,000		$ 50,000		
Storm Sewers	$ 100,000		$ 100,000		
Water Mains	$ 100,000		$ 100,000		
Sanitary Sewer Mains	$ 100,000		$ 100,000		
Landscaping	$ 150,000		$ 150,000		
Park/Seating Areas	$ 50,000		$ 50,000		
Professional Fees Directly Related to Infrastructure Improvements	$ 130,000		$ 130,000		
Infrastructure Sub-Total	**$ 1,430,000**	**$ -**	**$ 1,430,000**	**$ -**	**$ -**
Site Preparation					
Staking Related to Eligible Activities	$ 50,000		$ 50,000		
Geotechnical Engineering	$ 25,000		$ 25,000		
Clearing and Grubbing	$ 50,000		$ 50,000		
Temporary Construction Access and/or Roads	$ 5,000		$ 5,000		
Temporary Traffic Control	$ 25,000		$ 25,000		
Temporary Facility	$ 10,000		$ 10,000		
Temporary Erosion Control	$ 15,000		$ 15,000		
Temporary Site Control (fencing, gates, signage, lighting etc.)	$ 25,000		$ 25,000		
Excavation of Unstable Material	$ 25,000		$ 25,000		
Foundation Work to Address Special Soil Concerns	$ 100,000		$ 100,000		
Fill Relating to Other Eligible Activities	$ 25,000		$ 25,000		
Dewatering Relating to Other Eligible Activities	$ 25,000		$ 25,000		
Grading	$ 30,000		$ 30,000		
Relocation of Active Utilities (Electric, Gas, Water, Sewer)	$ 100,000		$ 100,000		
Unique Site Preparation Activities	$ 50,000		$ 50,000		
Professional Fees Directly Related to Site Preparation Activities	$ 50,000		$ 50,000		
Site Preparation Sub-Total	**$ 610,000**	**$ -**	**$ 610,000**	**$ -**	**$ -**
Preparation of Brownfield Plan and Act 381 Workplan					
Brownfield Plan	$ 25,000	$ 6,250	$ 6,250	$ 6,250	$ 6,250
Brownfield Plan and Act 381 Workplan Sub-Total	**$ 25,000**	**$ 6,250**	**$ 6,250**	**$ 6,250**	**$ 6,250**
Eligible Activities Sub-Total	**$ 5,720,890**	**$ 918,830**	**$ 2,553,750**	**$ 1,729,560**	**$ 518,750**
15% Contingency*	$ 841,838	$ 131,306	$ 382,125	$ 251,531	$ 76,875
Developer Eligible Reimbursement Total	**$ 6,562,728**	**$ 1,050,136**	**$ 2,935,875**	**$ 1,981,091**	**$ 595,625**

*15% Contingency excludes preparation of Brownfield Plan/381 Work Plan and Baseline Environmental Assessments

Tax Increment Financing Estimates:
Table 2

		2016	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Base Combined Taxable Value		$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820
Projected Taxable Value (estimated annual increase of 1%)			$ 1,221,700	$ 2,443,400	$ 2,467,834	$ 2,492,512	$ 2,517,437	$ 2,542,612	$ 2,568,038	$ 2,593,718	$ 2,619,656	$ 2,645,852
Incremental Difference (Projected Tax Value *minus* Existing Tax Value)			$ 569,880	$ 1,791,580	$ 1,816,014	$ 1,840,692	$ 1,865,617	$ 1,890,792	$ 1,916,218	$ 1,941,898	$ 1,967,836	$ 1,994,032
Local Taxes - Millage												
County Pk & Rec	0.2392	$ 156	$ 136	$ 429	$ 434	$ 440	$ 446	$ 452	$ 458	$ 465	$ 471	$ 477
HCMA	0.2146	$ 140	$ 122	$ 384	$ 390	$ 395	$ 400	$ 406	$ 411	$ 417	$ 422	$ 428
OCPTA	0.9941	$ 648	$ 567	$ 1,781	$ 1,805	$ 1,830	$ 1,855	$ 1,880	$ 1,905	$ 1,930	$ 1,956	$ 1,982
County Operating	4.0400	$ 2,633	$ 2,302	$ 7,238	$ 7,337	$ 7,436	$ 7,537	$ 7,639	$ 7,742	$ 7,845	$ 7,950	$ 8,056
OIS Allocated	0.1985	$ 129	$ 113	$ 356	$ 360	$ 365	$ 370	$ 375	$ 380	$ 385	$ 391	$ 396
OIS Voted	3.1413	$ 2,048	$ 1,790	$ 5,628	$ 5,705	$ 5,782	$ 5,860	$ 5,940	$ 6,019	$ 6,100	$ 6,182	$ 6,264
OCC	1.5707	$ 1,024	$ 895	$ 2,814	$ 2,852	$ 2,891	$ 2,930	$ 2,970	$ 3,010	$ 3,050	$ 3,091	$ 3,132
Infrastructure	2.8472	$ 1,856	$ 1,623	$ 5,101	$ 5,171	$ 5,241	$ 5,312	$ 5,383	$ 5,456	$ 5,529	$ 5,603	$ 5,677
City Operating	10.8434	$ 7,068	$ 6,179	$ 19,427	$ 19,692	$ 19,959	$ 20,230	$ 20,503	$ 20,778	$ 21,057	$ 21,338	$ 21,622
City Oper-2015	2.7804	$ 1,812	$ 1,584	$ 4,981	$ 5,049	$ 5,118	$ 5,187	$ 5,257	$ 5,328	$ 5,399	$ 5,471	$ 5,544
Solid Waste	1.6260	$ 1,060	$ 927	$ 2,913	$ 2,953	$ 2,993	$ 3,033	$ 3,074	$ 3,116	$ 3,158	$ 3,200	$ 3,242
Pool/Rec OPER	1.2073	$ 787	$ 688	$ 2,163	$ 2,192	$ 2,222	$ 2,252	$ 2,283	$ 2,313	$ 2,344	$ 2,376	$ 2,407
Park Improvement	0.7190	$ 469	$ 410	$ 1,288	$ 1,306	$ 1,323	$ 1,341	$ 1,359	$ 1,378	$ 1,396	$ 1,415	$ 1,434
Publicity	0.3481	$ 227	$ 198	$ 624	$ 632	$ 641	$ 649	$ 658	$ 667	$ 676	$ 685	$ 694
Total Local Taxes (capturable)	**30.7698**	**$ 20,056**	**$ 17,535**	**$ 55,127**	**$ 55,878**	**$ 56,638**	**$ 57,405**	**$ 58,179**	**$ 58,962**	**$ 59,752**	**$ 60,550**	**$ 61,356**
School Taxes												
School Operating	18.0000	$ 11,733	$ 10,258	$ 32,248	$ 32,688	$ 33,132	$ 33,581	$ 34,034	$ 34,492	$ 34,954	$ 35,421	$ 35,893
SET	6.0000	$ 3,911	$ 3,419	$ 10,749	$ 10,896	$ 11,044	$ 11,194	$ 11,345	$ 11,497	$ 11,651	$ 11,807	$ 11,964
Total School Taxes	**24.0000**	**$ 15,644**	**$ 13,677**	**$ 42,998**	**$ 43,584**	**$ 44,177**	**$ 44,775**	**$ 45,379**	**$ 45,989**	**$ 46,606**	**$ 47,228**	**$ 47,857**
Total Capturable Millages	**54.7698**	**$ 35,700**	**$ 31,212**	**$ 98,124**	**$ 99,463**	**$ 100,814**	**$ 102,179**	**$ 103,558**	**$ 104,951**	**$ 106,357**	**$ 107,778**	**$ 109,213**
Non-Capturable Millages												
Zoo Authority (County)	0.0990	$ 65	$ 56	$ 177	$ 180	$ 182	$ 185	$ 187	$ 190	$ 192	$ 195	$ 197
Art Institute (County)	0.1981	$ 129	$ 113	$ 355	$ 360	$ 365	$ 370	$ 375	$ 380	$ 385	$ 390	$ 395
FPS Sinking Fund (Pleasant Ridge and Ferndale)	1.3000	$ 847	$ 741	$ 2,329	$ 2,361	$ 2,393	$ 2,425	$ 2,458	$ 2,491	$ 2,524	$ 2,558	$ 2,592
FPS Debt (Pleasant Ridge and Ferndale)	7.0000	$ 4,563	$ 3,989	$ 12,541	$ 12,712	$ 12,885	$ 13,059	$ 13,236	$ 13,414	$ 13,593	$ 13,775	$ 13,958
Pool/Rec Debt (Pleasant Ridge)	1.2122	$ 790	$ 691	$ 2,172	$ 2,201	$ 2,231	$ 2,262	$ 2,292	$ 2,323	$ 2,354	$ 2,385	$ 2,417
Library	0.3763	$ 245	$ 214	$ 674	$ 683	$ 693	$ 702	$ 712	$ 721	$ 731	$ 740	$ 750
	10.1856	$ 6,394	$ 5,590	$ 17,574	$ 17,814	$ 18,056	$ 18,300	$ 18,547	$ 18,797	$ 19,049	$ 19,303	$ 19,560
Total Millages	**64.9554**	**$ 42,094**	**$ 36,802**	**$ 115,699**	**$ 117,277**	**$ 118,870**	**$ 120,480**	**$ 122,106**	**$ 123,748**	**$ 125,406**	**$ 127,081**	**$ 128,773**
Annual Local Incremental Taxes			$ 17,535	$ 55,127	$ 55,878	$ 56,638	$ 57,405	$ 58,179	$ 58,962	$ 59,752	$ 60,550	$ 61,356
Annual School Incremental Taxes			$ 13,677	$ 42,998	$ 43,584	$ 44,177	$ 44,775	$ 45,379	$ 45,989	$ 46,606	$ 47,228	$ 47,857
Local Admin Fee			$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500
3 Mils from SET to State Brownfield Fund			$ 1,710	$ 5,375	$ 5,448	$ 5,522	$ 5,597	$ 5,672	$ 5,749	$ 5,826	$ 5,904	$ 5,982
Annual Local Incremental Taxes Minus Admin Fee			$ 11,035	$ 48,627	$ 49,378	$ 50,138	$ 50,905	$ 51,679	$ 52,462	$ 53,252	$ 54,050	$ 54,856
Annual School Incremental Taxes Minus State Fund			$ 11,967	$ 37,623	$ 38,136	$ 38,655	$ 39,178	$ 39,707	$ 40,241	$ 40,780	$ 41,325	$ 41,875
Total Combined Yearly Captured Taxes			**$ 23,003**	**$ 86,250**	**$ 87,515**	**$ 88,792**	**$ 90,083**	**$ 91,386**	**$ 92,702**	**$ 94,032**	**$ 95,374**	**$ 96,731**
Cumulative Combined Captured Taxes			**$ 23,003**	**$ 109,252**	**$ 196,767**	**$ 285,559**	**$ 375,642**	**$ 467,028**	**$ 559,730**	**$ 653,762**	**$ 749,136**	**$ 845,867**
MDEQ Reimbursed Expenses												
Local Taxes			9,936	37,255	37,801	38,353	38,910	39,473	40,042	40,616	41,196	41,782
School Taxes			7,750	29,058	29,484	29,915	30,349	30,788	31,232	31,680	32,132	32,589
Total			17,685	66,313	67,285	68,267	69,259	70,261	71,273	72,296	73,328	74,371
Unreimbursed MDEQ Eligible Expenses		**$ 1,981,091**	**1,963,406**	**1,897,093**	**1,829,808**	**1,761,541**	**1,692,281**	**1,622,020**	**1,550,746**	**1,478,451**	**1,405,123**	**1,330,752**
MSF Reimbursed Expenses												
Local Taxes			2,987	11,201	11,365	11,531	11,699	11,868	12,039	12,211	12,386	12,562
School Taxes			2,330	8,736	8,865	8,994	9,125	9,257	9,390	9,525	9,661	9,798
Total			5,317	19,937	20,230	20,525	20,823	21,124	21,429	21,736	22,046	22,360
Unreimbursed MSF Eligible Expenses		**595,625**	**590,308**	**570,371**	**550,141**	**529,616**	**508,793**	**487,668**	**466,240**	**444,504**	**422,457**	**400,097**
Local Site Remediation Revolving Fund Capture												
Local Taxes												

Tax Ratio	Millages	Percentage
Local Tax	30.7698	56.18%
School Tax	24.0000	43.82%
Total	54.7698	100.00%

Total eligible expense ratio			
MSF	$	595,625	23.12%
MDEQ	$	1,981,091	76.88%
Local	$	-	0.00%
Total	**$**	**2,576,716**	**100.00%**

Eligible activity school/local reimbursement breakdown			
	Local	School	Total
MSF	$334,623	$261,002	**$ 595,625**
MDEQ	$1,112,981	$868,110	**$ 1,981,091**
Total	**$1,447,605**	**$1,129,111**	**$ 2,576,716**

Tax Increment Financing Estimates:
Table 2

2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820
$ 2,672,311	$ 2,699,034	$ 2,726,024	$ 2,753,284	$ 2,780,817	$ 2,808,625	$ 2,836,712	$ 2,865,079	$ 2,893,729	$ 2,922,667	$ 2,951,893
$ 2,020,491	$ 2,047,214	$ 2,074,204	$ 2,101,464	$ 2,128,997	$ 2,156,805	$ 2,184,892	$ 2,213,259	$ 2,241,909	$ 2,270,847	$ 2,300,073
$ 483	$ 490	$ 496	$ 503	$ 509	$ 516	$ 523	$ 529	$ 536	$ 543	$ 550
$ 434	$ 439	$ 445	$ 451	$ 457	$ 463	$ 469	$ 475	$ 481	$ 487	$ 494
$ 2,009	$ 2,035	$ 2,062	$ 2,089	$ 2,116	$ 2,144	$ 2,172	$ 2,200	$ 2,229	$ 2,257	$ 2,287
$ 8,163	$ 8,271	$ 8,380	$ 8,490	$ 8,601	$ 8,713	$ 8,827	$ 8,942	$ 9,057	$ 9,174	$ 9,292
$ 401	$ 406	$ 412	$ 417	$ 423	$ 428	$ 434	$ 439	$ 445	$ 451	$ 457
$ 6,347	$ 6,431	$ 6,516	$ 6,601	$ 6,688	$ 6,775	$ 6,863	$ 6,953	$ 7,043	$ 7,133	$ 7,225
$ 3,174	$ 3,216	$ 3,258	$ 3,301	$ 3,344	$ 3,388	$ 3,432	$ 3,476	$ 3,521	$ 3,567	$ 3,613
$ 5,753	$ 5,829	$ 5,906	$ 5,983	$ 6,062	$ 6,141	$ 6,221	$ 6,302	$ 6,383	$ 6,466	$ 6,549
$ 21,909	$ 22,199	$ 22,491	$ 22,787	$ 23,086	$ 23,387	$ 23,692	$ 23,999	$ 24,310	$ 24,624	$ 24,941
$ 5,618	$ 5,692	$ 5,767	$ 5,843	$ 5,919	$ 5,997	$ 6,075	$ 6,154	$ 6,233	$ 6,314	$ 6,395
$ 3,285	$ 3,329	$ 3,373	$ 3,417	$ 3,462	$ 3,507	$ 3,553	$ 3,599	$ 3,645	$ 3,692	$ 3,740
$ 2,439	$ 2,472	$ 2,504	$ 2,537	$ 2,570	$ 2,604	$ 2,638	$ 2,672	$ 2,707	$ 2,742	$ 2,777
$ 1,453	$ 1,472	$ 1,491	$ 1,511	$ 1,531	$ 1,551	$ 1,571	$ 1,591	$ 1,612	$ 1,633	$ 1,654
$ 703	$ 713	$ 722	$ 732	$ 741	$ 751	$ 761	$ 770	$ 780	$ 790	$ 801
$ 62,170	**$ 62,992**	**$ 63,823**	**$ 64,662**	**$ 65,509**	**$ 66,364**	**$ 67,229**	**$ 68,102**	**$ 68,983**	**$ 69,874**	**$ 70,773**
$ 36,369	$ 36,850	$ 37,336	$ 37,826	$ 38,322	$ 38,822	$ 39,328	$ 39,839	$ 40,354	$ 40,875	$ 41,401
$ 12,123	$ 12,283	$ 12,445	$ 12,609	$ 12,774	$ 12,941	$ 13,109	$ 13,280	$ 13,451	$ 13,625	$ 13,800
$ 48,492	**$ 49,133**	**$ 49,781**	**$ 50,435**	**$ 51,096**	**$ 51,763**	**$ 52,437**	**$ 53,118**	**$ 53,806**	$ 54,500	**$ 55,202**
$ 110,662	**$ 112,125**	**$ 113,604**	**$ 115,097**	**$ 116,605**	**$ 118,128**	**$ 119,666**	**$ 121,220**	**$ 122,789**	**$ 124,374**	**$ 125,975**
$ 200	$ 203	$ 205	$ 208	$ 211	$ 214	$ 216	$ 219	$ 222	$ 225	$ 228
$ 400	$ 406	$ 411	$ 416	$ 422	$ 427	$ 433	$ 438	$ 444	$ 450	$ 456
$ 2,627	$ 2,661	$ 2,696	$ 2,732	$ 2,768	$ 2,804	$ 2,840	$ 2,877	$ 2,914	$ 2,952	$ 2,990
$ 14,143	$ 14,330	$ 14,519	$ 14,710	$ 14,903	$ 15,098	$ 15,294	$ 15,493	$ 15,693	$ 15,896	$ 16,101
$ 2,449	$ 2,482	$ 2,514	$ 2,547	$ 2,581	$ 2,614	$ 2,649	$ 2,683	$ 2,718	$ 2,753	$ 2,788
$ 760	$ 770	$ 781	$ 791	$ 801	$ 812	$ 822	$ 833	$ 844	$ 855	$ 866
$ 19,820	$ 20,082	$ 20,346	$ 20,614	$ 20,884	$ 21,157	$ 21,432	$ 21,711	$ 21,992	$ 22,275	$ 22,562
$ 130,481	**$ 132,207**	**$ 133,950**	**$ 135,711**	**$ 137,489**	**$ 139,285**	**$ 141,098**	**$ 142,930**	**$ 144,780**	**$ 146,649**	**$ 148,537**
$ 62,170	$ 62,992	$ 63,823	$ 64,662	$ 65,509	$ 66,364	$ 67,229	$ 68,102	$ 68,983	$ 69,874	$ 70,773
$ 48,492	$ 49,133	$ 49,781	$ 50,435	$ 51,096	$ 51,763	$ 52,437	$ 53,118	$ 53,806	$ 54,500	$ 55,202
$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500
$ 6,061	$ 6,142	$ 6,223	$ 6,304	$ 6,387	$ 6,470	$ 6,555	$ 6,640	$ 6,726	$ 6,813	$ 6,900
$ 55,670	$ 56,492	$ 57,323	$ 58,162	$ 59,009	$ 59,864	$ 60,729	$ 61,602	$ 62,483	$ 63,374	$ 64,273
$ 42,430	$ 42,991	$ 43,558	$ 44,131	$ 44,709	$ 45,293	$ 45,883	$ 46,478	$ 47,080	$ 47,688	$ 48,302
$ 98,100	**$ 99,484**	**$ 100,881**	**$ 102,292**	**$ 103,718**	**$ 105,157**	**$ 106,611**	**$ 108,080**	**$ 109,563**	**$ 111,061**	**$ 112,574**
$ 943,967	**$ 1,043,451**	**$ 1,144,332**	**$ 1,246,625**	**$ 1,350,342**	**$ 1,455,500**	**$ 1,562,111**	**$ 1,670,191**	**$ 1,779,754**	**$ 1,890,816**	**$ 2,003,390**
42,373	42,971	43,574	44,184	44,800	45,421	46,050	46,684	47,325	47,972	48,625
33,051	33,517	33,987	34,463	34,943	35,428	35,918	36,413	36,912	37,417	37,927
75,424	76,487	77,562	78,647	79,743	80,850	81,967	83,097	84,237	85,389	86,552
1,255,328	**1,178,841**	**1,101,279**	**1,022,632**	**942,889**	**862,040**	**780,072**	**696,976**	**612,739**	**527,350**	**440,798**
12,740	12,919	13,101	13,284	13,469	13,656	13,845	14,036	14,228	14,423	14,619
9,937	10,077	10,218	10,361	10,506	10,652	10,799	10,948	11,098	11,250	11,403
22,677	22,996	23,319	23,646	23,975	24,308	24,644	24,983	25,326	25,673	26,022
377,421	**354,424**	**331,105**	**307,459**	**283,484**	**259,177**	**234,533**	**209,549**	**184,223**	**158,550**	**132,528**

MEMO

ASTI Environmental

Date: April 13, 2017
To: Jordan Twardy, City of Ferndale
James Breuckman, City of Pleasant Ridge
From: Tom Wackerman
Subject: Review of Brownfield Plan for Proposed Iron Ridge Development (ASTI File No. 10108)

ASTI reviewed the draft Brownfield Plan (the Plan) for the above project titled *Oakland County Brownfield Redevelopment Authority, Brownfield Plan For: Proposed Iron Ridge Development, Located at 3155-3351 Bermuda, 3164-3350 Bermuda, and 660 East 10 Mile Road, Ferndale: 400-404 East 10 Mile Road and 660 East 10 Mile road, Pleasant Ridge, Oakland County, Michigan* and dated April 5, 2017. Please note that the Property Map in Appendix B of the Plan is dated April 25, 2016.

General
The Plan is for the redevelopment of 5 parcels located in the City of Pleasant Ridge and 19 parcels in the City of Ferndale into a single mixed use redevelopment. Because the Plan is for a multi-jurisdictional project, the Plan will be submitted to the Oakland County Brownfield Redevelopment Authority (BRA) for review and recommendation for approval, and will then require approval from the City of Pleasant Ridge City Council, City of Ferndale City Council, and the Oakland County Board of Commissioners.

The Plan is requesting reimbursement of $6,562,727. This includes reimbursement of $2,576,716 over a period of 26 years from the City of Pleasant Ridge, and $3,986,011 over a period of 23 years from the City of Ferndale. The Plan also includes contributes $911,704 to the Oakland County Local Site Remediation Revolving Fund for five additional years for each community. Capture for the Oakland County BRA at $290,000 over the life of the Plan, and capture for the city of Ferndale BRA at $42,000 over the life of the Plan are also included. Total capture for all activities is $8,346,857.

This Plan is for the capture of non-school (local) and school taxes, not including non-captureable millages. Capture of school taxes will require approval by the MSF and MDEQ of a 381 Work Plan.

No other incentives are being requested for this project.

Basis for Eligibility
Based on the following, the project is eligible.

ASTI ENVIRONMENTAL
10448 Citation Drive, #100
P.O. Box 2160
Brighton, Michigan 48116
Phone: 810.225.2800 Fax: 810.225.3800

Eligible Property: The 24 properties included in the Plan are considered "Eligible Property," as defined by Act 381, because they are either a facility as defined by Part 201 of Act 451, or are adjacent and contiguous to a facility.

However, the boundaries of the project are unclear, and the extent of the eligible properties does not match the proposed site plan. In specific:

- The property on the south of 10 Mile and east of Eprize Drive is not included in the list of eligible properties or the eligible Property Map, but is included in the project outline on the Property Map, and is also included in the redevelopment site plan. If not included it should be excluded from the project footprint and site plan.
- The property on the south end of Bermuda on the west side and immediately north of 25-27-201-015 is not included in the list of eligible properties or the eligible Property Map (does not have complete property boundaries), but is included in the project outline on the Property Map, and appears to be included in the redevelopment site plan. If not included it should be excluded from the project footprint.
- One parcel, consisting of three subdivided lots, located north of 3310 Bermuda and south of 3342 Bermuda are not included in the list of eligible properties or the eligible Property Map, but are included in the project outline on the Property Map. If not included it should be excluded from the project footprint.

Eligible Activities: All captured expenses in the Plan allocated to the City of Ferndale are eligible activities applicable in a core community. All captured expenses in the Plan allocated to the City of Pleasant Ridge are eligible activities applicable in a non-core community. This determination assumes that the eligible expenses listed for each community are incurred on property within that community.

Eligible Activities:

References to eligible activity costs are "estimates" and the total amount for reimbursement is "approximate". This may result in additional costs to the Plan. The total reimbursement amount should be listed as not-to-exceed unless the Plan is modified.

The following eligible activities need clarification or consideration by the BRA:

- Capture for the replacement and installation of water mains and sanitary sewer are included in the infrastructure category for the City of Ferndale. If this infrastructure improvement is to be completed by the City, then the City should be included in the Brownfield Plan and reimbursement tax capture tables. If it is to be completed by the applicant, it should be determined if it is consistent with City plans and requirements.
- Capture for a Local Administrative Fee in the City of Pleasant Ridge is included in the tax capture Table 2. The City of Pleasant Ridge does not currently have a BRA. Please specify the method to capture this fee or remove it from the calculations. Removal of this capture should reduce the reimbursement period by six months.

Modifications to the Plan:

The following modifications to the Plan are recommended:

1. The list of properties and basis for eligibility on pages 2 to 4 do not match the list of eligible properties and basis for eligibility on the Property Map. In specific the following should be reviewed and modified:
    a. Parcel 25-27-201-012 is listed as eligible as a facility in the table, and eligible as adjacent on the map.
    b. Parcel 25-27-201-015 appears to be listed as 3155 Bermuda on the table, but 3165 on the map.
    c. Parcel 25-27-202-010 could not be located on the map.
    d. Parcel 25-27-202-022 could not be located on the map
    e. 3206 Bermuda is listed twice on the map. One of these listings appear to be for 3216.
    f. 3291 Bermuda is listed as 3291B on the map. Is this a different parcel?
    g. 404 East 10 Mile is listed twice on the Map as 404 and 404-013 and therefore cannot be related to the table. It is unclear what the suffix represents.
    h. 660 E Ten Mile is listed twice on the table and three times on the map as 660-20, 660-52 and 660-10 and therefore cannot be related to the table. It is unclear what the suffix represents.
    i. The surface parking lots listed on the map should include the parcel number in order to relate it to the table.
    j. An alley exists between 660-20 E 10 Mile and 3351 Bermuda on the map. If this alley will be vacated as part of the project that should be stated.
2. The discussion on individual properties starting on page 4 should include the parcel numbers in order to relate to the table and Property Map.
3. The reference to Pleasant Ridge in Section B as a qualified local governmental unit under 381 should be changed.
4. The reference to adjacent properties in Section B should be “adjacent and contiguous”. This should be consistent throughout.
5. The cost for Baseline Assessments in Pleasant Ridge listed in Section C is not the same as that listed in Table 1, which is used in the tax capture tables.
6. The total eligible costs for Ferndale in the third to last paragraph in Section C should be $3,986,011. It appears that the contingency was not included.
7. The total non-captureable revenues in the second paragraph of Section H match the tables on pages 11 and 12, but the amount of captureable taxes in that table does not match the tax capture tables in the appendix. For example, the total captureable taxes on Page 12 for Ferndale is listed as $6,197,493, while that same category in the tax capture table is listed as $5,584,660. As such, it is unclear that the tables on pages 11 and 12 actually indicate the impact on taxing jurisdictions. Please explain this difference or modify the tables.
8. The total amount listed as captureable in the tax capture tables does not match the amount captured. It appears that the actual tax capture is $1,500 less than the available tax capture during each year of reimbursement, and that all the remaining tax capture is not allocated to the LSRRF. As such, the actual capture for the City of Pleasant Ridge is $219,212 less than available, and the actual tax capture for the City of Ferndale is $490,984 less than available. It appears that the first error is an error in the formula on line 47. This would reduce the repayment period by two years. Please explain this difference or modify the tables.

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Recommendations:

1. The modifications and clarifications for eligible activities listed above should be made to the Plan.
2. Because the future taxable value, and the approval of multiple jurisdictions, is dependent on the site plan, the site plan should be included as an attachment to the Plan.
3. A table indicating each of the parcels included in the Plan by parcel ID number, the associated street address, the initial taxable value, and the estimated future taxable value assumption should be provided. This should include a reference to the site plan.
4. Provide an updated parcel map with parcel numbers that can be referenced to the eligible property table in the text. Provide the corrected project boundary.
5. Since this is a multi-jurisdictional Plan, multiple approvals are required. Therefore, the third paragraph in Section I, and all of Section II(L), should be modified to require an amendment and re-approval by the City of Ferndale City Council, the City of Pleasant Ridge City County, and the Oakland County Board of Commissioners if there is any modifications to the Plan or change in the use of the site, the designated developer, or the eligible activities.
6. The Plan text should be modified to include language indicating that both cities will only reimburse for their proportional share of eligible expenses in the event that the MEDC or the MDEQ does not approve all of some of the expenses.
7. It should be stated that no other incentives are being requested.
8. Once the above changes have been provided, we recommend another review of the Plan before submitting it to the Oakland County BRA for review.

Please contact me if you have any questions, or need additional information.

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OAKLAND COUNTY
BROWNFIELD REDEVELOPMENT AUTHORITY

BROWNFIELD PLAN FOR:

PROPOSED IRON RIDGE DEVELOPMENT

Located at:
3155-3351 Bermuda, 3164-3350 Bermuda, and 660 East 10 Mile Road, Ferndale;
400-404 East 10 Mile Road and 660 East 10 Mile Road, Pleasant Ridge, Oakland County, Michigan

APRIL 5, 2017

Approved by BRA:
Approved by County Commission:

Prepared on Behalf of:

Iron Ridge Holdings, LLC and Iron Ridge Office, LLC
47 Oxford Road
Grosse Pointe Shores, Michigan 48236
Contact Person: Mr. Dennis Griffin and Mr. John Breza
Telephone: (248) 855-3330

Prepared By:

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4080 West Eleven Mile Road
Berkley, Michigan 48072
Contact Person: Elizabeth Masserang
Telephone: (248)414-1441

PM ENVIRONMENTAL
Risk Well Managed

TABLE OF CONTENTS

APPENDICIES

TABLES

PROJECT SUMMARY

Project Name:	Iron Ridge – Proposed Mixed-Use Campus
Project Location:	The property consists of 25 parcels located partially in Ferndale and Pleasant Ridge, Oakland County, Michigan, 48220 and 48069 in Township one north (T.1N), Range 11 east (R.11E), Section 27.
Type of Eligible Property:	The property is determined to be a "Facility" or adjacent to a "Facility"
Eligible Activities:	Baseline Environmental Site Assessment Activities, Due Care Activities, Asbestos Activities, Demolition, Infrastructure Improvements, Site Preparation, and Preparation of a Brownfield Plan and Act 381 Work Plan.
Developer Reimbursable Costs:	$6,562,728 (includes eligible activities and 15% contingency)
Years to Complete Developer Reimbursement :	23-26 Years from date of Brownfield Plan approval
Estimated Capital Investment:	Approximately $25-32 million (including Acquisition, Hard and Soft Costs)
Project Overview:	The project entails the extensive renovation of a former, dilapidated industrial building and surrounding property for reuse as an inclusive multi-use campus. The nearly 70,000 square foot vacant industrial building that anchors the campus, will be transformed into a market space, beer garden and brewery, and provide additional office and commercial space. The campus will include the renovation of three additional buildings that will be occupied by tech offices, professional offices, a fitness center, and commercial space. The construction of new apartment complexes to complement the site are also proposed along the eastern portion. Together, the existing building space and proposed new build totals approximately 231,000 square feet.

I. INTRODUCTION AND PURPOSE

In order to promote the revitalization of environmentally distressed, historic, functionally obsolete and blighted areas within the boundaries of Oakland County ("the County"), the County has established the Oakland County Brownfield Redevelopment Authority (OCBRA) the "Authority" pursuant to the Brownfield Redevelopment Financing Act, Michigan Public Act 381 of 1996, as amended ("Act 381").

The purpose of this Brownfield Plan (the "Plan") is to promote the redevelopment of and investment in the eligible "Brownfield" Property within the County and to facilitate financing of eligible activities at the Property. Inclusion of Property within any Plan in the County will facilitate financing of eligible activities at eligible properties, and will provide tax incentives to eligible taxpayers willing to invest in revitalization of eligible sites, commonly referred to as "Brownfields." By facilitating redevelopment of the Property, this Plan is intended to promote economic growth for the benefit of the residents of the County and all taxing units located within and benefited by the Authority.

The identification or designation of a developer or proposed use for the Property that is subject to this Plan shall not be integral to the effectiveness or validity of this Plan. This Plan is intended to apply to the eligible property identified in this Plan and, to identify and authorize the eligible activities to be funded. Any change in the proposed developer or proposed use of the eligible property shall not necessitate an amendment to this Plan, affect the application of this Plan to the eligible property, or impair the rights available to the Authority under this Plan.

This Plan is intended to be a living document, which may be modified or amended in accordance with and as necessary to achieve the purposes of Act 381. The applicable sections of Act 381 are noted throughout the Plan for reference purposes.

This Brownfield Plan contains information required by Section 13(1) of Act 381, as amended

II. GENERAL PROVISIONS

A. Description of the Eligible Property (Section 13 (1)(h)) and Project

The Eligible Property consists of twenty-four (24) legal parcels totaling approximately 13 acres, referred to within this plan as the Property. All parcels are located within Pleasant Ridge and Ferndale, Oakland County, Michigan (the "Property") as outlined below.

Parcel ID Number	Address	City	Approx. Acreage	Eligibility	Current Zoning
25-27-201-005	3351 BERMUDA ST	Ferndale	0.169	"Facility"	M-1: Limited Industrial
25-27-201-012	3281 BERMUDA ST	Ferndale	0.165	"Facility"	M-1: Limited Industrial
25-27-201-013	3265 BERMUDA ST	Ferndale	1.139	"Facility"	M-1: Limited Industrial
25-27-201-015	3155 BERMUDA ST	Ferndale	0.750	"Facility"	M-1: Limited Industrial
25-27-201-019	3291 BERMUDA ST	Ferndale	1.000	"Facility"	M-1: Limited Industrial

Parcel ID Number	Address	City	Approx. Acreage	Eligibility	Current Zoning
25-27-201-020	660 E TEN MILE RD	Ferndale	0.290	"Facility"	M-1: Limited Industrial
25-27-202-008	3350 BERMUDA ST	Ferndale	0.177	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-202-009	3342 BERMUDA ST	Ferndale	0.145	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-202-010	3334 BERMUDA ST	Ferndale	0.145	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-202-013	3310 BERMUDA ST	Ferndale	0.145	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-202-014	3300 BERMUDA ST	Ferndale	0.145	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-202-018	3252 BERMUDA ST	Ferndale	0.145	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-202-019	3242 BERMUDA ST	Ferndale	0.145	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-202-020	3232 BERMUDA ST	Ferndale	0.145	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-202-021	3224 BERMUDA ST	Ferndale	0.145	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-202-022	3216 BERMUDA ST	Ferndale	0.145	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-202-023	3206 BERMUDA ST	Ferndale	0.145	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-202-024	3164 BERMUDA ST	Ferndale	0.145	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-202-052	BERMUDA (formerly 700-710 E TEN MILE RD	Ferndale	0.206	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-202-053	BERMUDA (formerly 3262-3280 BERMUDA ST)	Ferndale	0.434	Adjacent to a "Facility"	P-1: Vehicular Parking
25-27-127-009	404 E TEN MILE RD	Pleasant Ridge	1.875	"Facility"	Workplace
25-27-127-010	660 E TEN MILE RD	Pleasant Ridge	3.470	"Facility"	Workplace

Parcel ID Number	Address	City	Approx. Acreage	Eligibility	Current Zoning
25-27-127-012	400 E TEN MILE RD	Pleasant Ridge	1.100	"Facility"	Workplace
25-27-127-013	NO ADDRESS	Pleasant Ridge	0.330	"Facility"	Workplace

Iron Ridge Holdings, LLC and Iron Ridge Office LLC, or any related entity, or such other developer as approved by the Authority, are collectively the project developer ("Developer").

The Developer team consists of CG Emerson Real Estate Group (CG Emerson), Milford Singer Company, and First Holding Management Company (First Holding). Collectively the they manage approximately 3 million square feet of commercial space and more than 2,000 residential units. CG Emerson has had recent experience redeveloping multiple properties within close proximity to the current project. Furthermore, Milford Singer is a third-generation development, construction, and property management company that has been continuously active for over 90 years.

The Property consists of commercial, industrial, and residential land in an area characterized by an area of similar uses. The property zoning will remain the same and permits the proposed future use, with the exception of the parcels currently zoned P-1: Vehicular Parking along the east side of Bermuda, which are currently being re-zoned to R-3: Residential to permit the proposed apartment use.

404 E. 10 Mile Road

The subject property, identified as 404 E. 10 Mile Road is developed with a 40,329 square foot commercial building. The building is mainly one-story with the central portion consisting of four stories and a basement. The northern portion of the subject building was occupied by Michigan Bell and utilized for service garages and machine shops in at least the 1950s. Additionally, the building contained an egg distributor in the 1950s. In the 1960s, the property was occupied by Frank's Nursery and utilized for warehousing of retail products, and by the late 1960s the building was occupied by Walmet Division of Valenite, Inc. A tool house was located on the southern portion of the property in at least the 1960s. Between 1974 and 1980, the current southern lobby area was developed in the area of the former tool house. Operations associated with Walmet consisted of manufacturing of carbides and included tooling and extrusion. The building was vacated by Walmet in 1994, and remained vacant through the 1990s. A portion of the building was occupied by professional offices from the early 2000s to 2016.

Walker Wire Properties

The main subject parcels, identified as 660 East 10 Mile Road (Ferndale and Pleasant Ridge) were initially developed prior to 1940 with dwellings. Industrial development began in the northern portion of the property in the mid-1940s, with the beginning of Walker Wire's operations. Multiple additions were constructed to the building through the early 1990s to expand the layout to the current building. The building, which totals approximately 74,000 square feet was occupied

by various wire and steel companies, mainly identified as Walker Wire Company, from initial development in the 1940s until the mid-2000s. Operations included wire cutting, stretching, and chemical treatment.

The southern portion of the main parcel (660 East 10 Mile Road) was utilized by Michigan Bell for telephone pole storage from at least 1949 until at least 1957.

The subject parcel identified as 3351 Bermuda Street, was initially developed in the 1940s with the current building. The building, which totals approximate 1,150 square feet, was occupied by a W.E. Foltz Company from at least 1950 until 1975, and consisted of a small machine shop. Fire department records included documentation that the operations utilized trichloroethylene. The building was purchased by Walker Wire in the early 1980s, and utilized as an employment office since that time.

The subject parcel identified as 3291 Bermuda Street was initially developed prior to 1940 with dwellings. A small tin shop was constructed on the property in the mid-1960s. All former buildings were demolished by 1980 when the parcel was converted to the current concrete paved surface lot for Walker Wire.

The subject parcel identified as 3281 Bermuda Street was initially developed prior to 1940 with a dwelling, which was demolished in the late 1970s when the parcel was converted to a concrete paved storage lot for Walker Wire. The current hazardous materials storage building, which totals approximately 2,600 square feet, was constructed on the western portion of the parcel in 1992.

The subject parcel identified as 3265 Bermuda Street was initially developed with portions of the current building constructed in the mid-1940s. The current building totals approximately 24,000 square feet. Various additions were constructed in the 1950s and 1980s. Former occupants included machinery manufacturers and tooling companies through the 1980s.

The subject parcel identified as 3155 Bermuda Street was initially developed in the mid-1940s with portions of the current industrial building, with additions in the 1950s. The current building totals approximately 18,500 square feet. The property was occupied by a nut and bolt manufacturer from at least 1950 until 1985. The building was generally utilized for limited warehousing and storage from that time until 2016.

The western subject parcels, identified as 400 East 10 Mile Road and associated parking lot, were initially developed prior to 1940 with a coal and fuel storage and sales operation. These operations ceased in the late 1970s, and the former silos were demolished and the current building was constructed. The current building at 400 East 10 Mile Road, which totals approximately 17,800 square feet was utilized for manufacturing operations from the 1970s until 1990s, associated with 404 East 10 Mile Road (carbide company). These operations ceased in the late 1990s, and the building was utilized for mostly warehousing with limited manufacturing by Walker Wire from the late 1990s until 2015. Former operations included stamping and presses. A small office building was present in the northwestern portion of the parcel, which was demolished between 2005 and 2008 to create more parking space for the adjoining property (404 East 10 Mile Road).

Residential Lots

The 12 residential parcels along the east side of Bermuda Street identified as 3164-3252 Bermuda Street and 3300-3350 Bermuda Street, were initially developed for residential use and have retained residential usage since that time. At current, approximately half of the homes have since been demolished.

Two lots, also located along the east side of Bermuda with no address, identified as parcels 24-25-27-202-052 and 25-27-202-053 are included within the project. The parcels were initially developed for residential use and have since been converted to use as parking lots.

The Property's legal description is included in Appendix A. Property location maps are included in Appendix B.

The proposed project entails the reuse of former industrial/warehouse buildings, identified as 404 and 660 E. 10 Mile Road, for use as tech. incubator and professional office space and a market/retail building, respectively. The proposed renovation is part of a larger revitalization that include surrounding property for reuse as an inclusive multi-use campus including the new construction of three multi-family residential buildings and the adaptive reuse of former industrial/warehouse buildings adjacent to 404 and 660 E. 10 Mile Road.

The nearly 70,000 square foot vacant industrial building, identified as 660 E 10 Mile Road (former Walker Wire site) that anchors the larger campus, will be transformed into a market space, beer garden and brewery, and provide additional office and commercial space. The campus will include the renovation of additional buildings that will be occupied by tech. offices, professional offices, a fitness center, and commercial and manufacturing space. The construction of new apartment complexes to complement the site are also proposed in the eastern portion. Together, the existing building space and proposed new build totals approximately 231,000 square feet.

Interior renovation activities have begun in some of the existing buildings. Overall project commencement is anticipated to begin in the summer of 2017. Renovations will continue over a two-year period as improvements and tenant spaces are created.

The Developer will invest an estimated $25-32 million in the development and create approximately 200 construction jobs and create 200-250 full-time equivalent (FTE) permanent jobs over the next three years.

Preliminary site plans and renderings are included in Appendix C.

B. Basis of Eligibility (Section 13 (1)(h) and Section 2(o))

The Property is considered "Eligible Property" as defined by Act 381, Section 2 because: (a) the Property was previously utilized or is currently utilized for a commercial and/or industrial purpose; (b) it is located within the Cities of Ferndale and Pleasant Ridge, qualified local governmental units under Act 381 and, (c) the parcels comprising the Property have each been determined to be a "facility" and/or adjacent to a "facility."

PM Environmental has completed a scope of work pursuant to:

1. a Phase II ESA and Baseline Environmental Assessment (BEA) at 660 East 10 Mile Road and adjacent parcels completed in December 2015;
2. a Phase II ESA at 404 E. 10 Mile Road completed in June 2016; and
3. a BEA at 404 East 10 Mile Road and adjacent parcels complete in April 2017;

The BEAs and related environmental site assessments consisted of various subsurface investigations including the advancement of soil borings and temporary monitoring wells throughout the Property. Soil and groundwater analytical results identified concentrations of tetrachloroethylene/trichloroethylene (PCE/TCE), benzene, various petroleum volatile organic compounds (VOCs), benzo(a)pyrene, flourathene and/or phenanthrene, polychlorinated biphenyls (PCBs), chromium, cis-1, 2-DCE, and vinyl chloride all above various Part 201 Residential and Nonresidential cleanup criteria.

According to Section 20101(1)(s) of Part 201 a "facility" means any area, place, or property where a hazardous substance in excess of the concentrations that satisfy the cleanup criteria for unrestricted residential use has been released, deposited, disposed of, or otherwise comes to be located. The subject property is a "facility" as defined under Part 201, based on concentrations identified in soil and groundwater identified during previous site investigations.

Contaminant concentrations identified on the Property identified as 660 East 10 Mile Road, 3155-3351 Bermuda Street, and 400 East 10 Mile Road indicate exceedances to the Part 201 Residential and Nonresidential Drinking Water Protection/Drinking Water (DWP/DW), Groundwater Surface Water Interface Protection/Groundwater Surface Water Interface (GSIP/GSI), Direct Contact (DC) cleanup criteria and Vapor Intrusion Screening Levels (VISLs); therefore, the Property is a “facility” under Part 201.

Contaminant concentrations identified on the Property identified as 404 East 10 Mile Road indicate exceedances to the Part 201 Residential and Nonresidential DWP, GSIP, SVII (Soil Volatilization to Indoor Air Inhalation (SVII), Ambient Air Volatile Soil Inhalation (SVI), Particulate Soil Inhalation (PSI), and DC cleanup criteria. Therefore, the subject property is a facility under Part 201 of P.A. 451, as amended, and the rules promulgated thereunder.

Additional documentation and description of the locality of the identified contaminants and the property’s “facility” status is provided in Appendix D.

C. Summary of Eligible Activities and Description of Costs (Sec. 13 (1)(a-b))

Tax Increment Financing revenues will be used to reimburse the costs of “eligible activities” (as defined by Section 2 of Act 381) as permitted under the Brownfield Redevelopment Financing Act that include: Baseline Environmental Site Assessments, Due Care Activities, Demolition, Asbestos Activities, Infrastructure Improvements, Site Preparation Activities, and preparation of a Brownfield Plan and Act 381 Work Plan. A complete itemization of these activities and associated expenses is included in Table 1.

The following eligible activities and budgeted costs are intended as part of the development of the property and are to be financed solely by the developer. All activities are intended to be “Eligible Activities” under the Brownfield Redevelopment Financing Act. The Authority is not responsible for any cost of eligible activities listed below and will incur no debt for these activities.

Eligible Activities - Ferndale

1. Baseline Environmental Site Assessment Activities include Phase I Environmental Site Assessments (ESAs), Phase II ESAs, and BEAs as required as part of the pre-purchase due diligence conducted on the property at a total cost of $37,205.

2. Due Care Activities includes the design and installation of a vapor barrier system including vapor evaluation for up to 4 quarters; contaminated soil transport and disposal associated with development activities; groundwater management; and, oversight/sampling/reporting by an environmental professional, removal of orphan USTs if encountered, at a total estimated cost of $865,375.

3. Demolition Activities includes a pre-demolition survey, building demolition, foundation removal, fill/compaction/rough grading to balance site where building is located, removal of parking lots, removal of curbs and gutters, removal of sidewalks, removal of paved alley, and fees related to demolition engineering and design at an estimated of $457,500.

4. Asbestos Activities includes an asbestos survey, asbestos containing materials (ACM) abatement, oversight, air monitoring and associated reporting at an estimated cost of $60,000.

5. Infrastructure Improvements include an urban storm water management system; sidewalks; curbs; gutters; landscaping within the public right of way and public park; public lighting; public signage; public park and seating areas; replacement and installation of water mains; replacement and installation of sanitary sewer mains; and professional fees directly related to infrastructure improvements at an estimated cost of $1,430,000.

6. Site Preparation includes temporary construction access/road; temporary traffic control; temporary erosion control; temporary site control (fencing, gates, signage, and/or lighting); temporary facility; land balancing; grading; staking; clearing and grubbing; excavation of unstable materials; foundation work to address special soil concerns; fill and dewatering related to other eligible activities; relocation of active utilities (electric, gas, water, sewer); and other unique site preparation activities at an estimated cost of $610,000.

7. Preparation of the Brownfield Plan and Act 381 Work Plan (if necessary) and associated activities (e.g. meetings with BRA, review by City Attorney etc.) at a cost of approximately $12,500.

8. A 15% contingency of $513,431 is established to address unanticipated environmental and/or other conditions that may be discovered through the implementation of site activities. This excludes the cost of Baseline Environmental Assessment Activities and preparation of the Brownfield Plan and Act 381 Work Plan.

Eligible Activities – Pleasant Ridge

1. Baseline Environmental Site Assessment Activities include Phase I ESAs, Phase II ESAs, and BEAs, required as part of the pre-purchase due diligence conducted on the property at a total cost of $46,435.

2. Due Care Activities includes the design and installation of a vapor barrier system including vapor evaluation for up to 4 quarters; contaminated soil transport and disposal associated with development activities; groundwater management; and, oversight/sampling/reporting by an environmental professional at a total estimated cost of $1,666,875.

3. Asbestos Activities includes an asbestos survey, asbestos containing materials (ACM) abatement, oversight, air monitoring and associated reporting at an estimated cost of $60,000.

4. Demolition Activities includes a pre-demolition survey, building demolition, foundation removal, fill/compaction/rough grading to balance site where building is located, removal of parking lots, removal of curbs and gutters, removal of sidewalks, removal of paved alley, and fees related to demolition engineering and design at an estimated of $462,500.

5. Preparation of the Brownfield Plan and Act 381 Work Plan (if necessary) and associated activities (e.g. meetings with BRA, review by City Attorney etc.) at a cost of approximately $12,500.

6. A 15% contingency of $328,406 is established to address unanticipated environmental and/or other conditions that may be discovered through the implementation of site activities. This excludes the cost of Baseline Environmental Assessment Activities and preparation of the Brownfield Plan and Act 381 Work Plan.

All activities are intended to be "Eligible Activities" under the Brownfield Redevelopment Financing Act. The total estimated cost of Eligible Activities subject to reimbursement from: (a) tax increment revenues in Ferndale is $3,472,580 with a potential $513,431 contingency resulting in a total cost of $3,472,580, and (b) tax increment revenues in Pleasant Ridge is $2,248,310 with a potential $328,406 resulting in a total cost of $2,576,716. Therefore the total cost for reimbursement to the applicant is a not-to-exceed amount of $6,562,728 (including contingency), unless the Plan is amended and approved by the OCBRA and Oakland County Board of Commissioners.

This plan also allots capture for local administrative fees as outlined in Table 2 and Table 3.

The OCBRA has established a Local Site Remediation Revolving Fund (LSRRF). Capture for the LSRRF is included in this plan for up to five (5) years following developer reimbursement, currently estimated at $905,704. The funds deposited into the LSRRF as part of this Plan will be used in accordance with the requirements of Act 381, as amended.

D. Estimate of Captured Taxable Value and Tax Increment Revenues (Sec. 13 (1)(c))

Incremental taxes on real property included in the redevelopment project will be captured under this Plan to reimburse eligible activity expenses. The base taxable value of the Property located in both Ferndale and Pleasant Ridge shall be determined by the use of the 2016 tax year tax values. The base taxable value for the Property located in Ferndale is $398,740. The base taxable value of the Property located in Pleasant Ridge is $651,820. Tax increment revenue capture is proposed to begin when tax increment is generated by redevelopment of the Property, which is expected to begin in 2018 or when full redevelopment is completed whichever occurs first. The estimated taxable value of the completed development in Ferndale is $3,604,850 and

in Pleasant Ridge is $2,443,400. This assumes a two-year phase-in for completion of the redevelopment, which has been incorporated into the tax increment financing assumptions for this Plan. An annual increase in taxable value of 0.5% has been used for calculation of future tax increments in this Plan. Tables 2 and Table 3 detail the estimate of captured tax increment revenues for each year of the Plan from the eligible property.

Prior to reimbursement of tax increment revenue to the Developer, payment of Brownfield Redevelopment Authority Administrative fees will occur first.

E. Method of Brownfield Plan Financing and Description of Advances by the Municipality (Sec. 13 (1)(d))

Eligible activities will be financed by Iron Ridge Holdings, LLC and/or Iron Ridge Office LLC. The Developer will be reimbursed for eligible costs as described in Section C and outlined in Table 1. Costs for Eligible Activities funded by Iron Ridge Holdings, LLC and/or Iron Ridge Office LLC will be repaid under the Michigan Brownfield Redevelopment Financing Program (Michigan Public Act 381, as amended) with incremental taxes generated by future development of the property. The estimated amount of tax increment revenue capture that will be used to reimburse the Developer and Brownfield Redevelopment Authority is $7,845,432. This includes Brownfield Plan preparation, Brownfield Redevelopment Authority Administrative fees and LSRRF deposits.

No advances will be made by the OCBRA for this project. All reimbursements authorized under this Plan shall be governed by the Reimbursement Agreement.

F. Maximum Amount of Note or Bonded Indebtedness (Sec. 13 (1)(e))

No note or bonded indebtedness will be incurred by any local unit of government for this project.

G. Duration of Brownfield Plan (Sec. 13 (1)(f))

In no event shall the duration of the Plan, exceed 35 years following the date of the resolution approving the Plan, nor shall the duration of the tax capture exceed the lesser of the period authorized under subsection (4) and (5) of Section 13 of Act 381 or 30 years. Further, in no event shall the beginning date of the capture of tax increment revenues be later than five years after the date of the resolution approving the Plan. The Property will become part of this Plan on the date this Plan is approved by the Oakland County Board of Commissioners.

H. Estimated Impact of Tax Increment Financing on Revenues of Taxing Jurisdictions (Sec. 13 (1)(g))

Taxes will continue to be generated to taxing jurisdictions on local captured millages at the base taxable value of $651,820 in Pleasant Ridge and $398,740 in Ferndale throughout the duration of this Plan totaling approximately $601,691 or $20,056 annually in Pleasant Ridge and $344,880 or $12,317 annually in Ferndale.

Non-capturable millages; including debt millages, the zoo authority and art institute, will see an immediate increase in tax revenue following redevelopment and will provide new tax revenue of approximately $621,907 in Pleasant Ridge and $425,181 in Ferndale throughout the duration of this Plan.

A summary of the impact to taxing jurisdictions for the life of the Plan is summarized below, which assumes taxes are captured throughout the duration of the Plan as estimated in Table 2 and Table 3.

Pleasant Ridge

Millage	Rate	Taxes Generated by Property	Taxes Preserved for Taxing Units
County Pk & Rec	0.2392	$19,843	$4,677
HCMA	0.2146	$17,802	$4,196
OCPTA	0.9941	$82,465	$19,439
County Operating	4.0400	$335,136	$79,001
OIS Allocated	0.1985	$16,466	$3,882
Millage	**Rate**	**Taxes Generated by Property**	**Taxes Preserved for Taxing Units**
OIS Voted	3.1413	$260,585	$61,427
OCC	1.5707	$130,296	$30,714
Infrastructure	2.8472	$236,188	$55,676
City Operating	10.8434	$899,507	$212,038
City Oper-2015	2.7804	$230,646	$54,370
Solid Waste	1.6260	$134,884	$31,796
Pool/Rec OPER	1.2073	$100,151	$23,608
Park Improvement	0.7190	$59,644	$14,060
Publicity	0.3481	$28,876	$6,807
Subtotal	***30.7698***	***$2,552,490***	***$601,691***
School Operating	18.0000	$1,493,179	$351,983
SET	6.0000	$497,726	$117,328
Subtotal	***24.0000***	***$1,990,905***	***$469,310***
Total Capturable	***54.7698***	***$4,543,395***	***$1,071,002***
Zoo Authority (County)	0.0990	$8,212	$8,212
Art Institute (County)	0.1981	$16,433	$16,433
FPS Sinking Fund	1.3000	$107,841	$107,841
FPS Debt	7.0000	$580,681	$580,681
Pool/Rec Debt	1.2122	$100,557	$100,557
Library	0.3763	$31,216	$31,216
Total Non-Capturable	***10.1856***	***$813,724***	***$813,724***
Total	***64.9554***	***$5,357,119***	***$1,884,726***

Ferndale

Millage	Rate	Taxes Generated by Property	Taxes Preserved for Taxing Units
County Pk & Rec	0.2392	$27,007	$2,671
HCMA	0.2146	$24,230	$2,396
OCPTA	0.9941	$112,241	$11,099

County Operating	4.0400	$456,145	$45,105
OIS Allocated	0.1985	$22,412	$2,216
OIS Voted	3.1413	$354,675	$35,072
OCC	1.5707	$177,343	$17,536
City Operating	13.9451	$1,574,501	$155,693
Refuse Disposal	2.0915	$236,145	$23,351
City Oper-Voted	4.4552	$503,024	$49,741
Subtotal	***30.8902***	***$3,487,723***	***$ 344,880***
School Operating	18.0000	$2,032,328	$200,965
SET	6.0000	$677,443	$66,988
Subtotal	***24.0000***	***$2,709,770***	***$267,953***
Total Capturable	***54.8902***	***$6,197,493***	***$612,834***
Millage	**Rate**	**Taxes Generated by Property**	**Taxes Preserved for Taxing Units**
Zoo Authority (County)	0.0990	$11,178	$11,178
Art Institute (County)	0.1981	$22,367	$22,367
FPS Sinking Fund	1.3000	$146,779	$146,779
FPS Debt	7.0000	$790,350	$790,350
Pool/Rec Debt	1.2122	$136,866	$136,866
GWK Facility DBT	1.7340	$195,781	$195,781
Debt Service (Ferndale)	4.1790	$11,178	$11,178
Library-Voted	0.9587	$22,367	$22,367
Total Non-Capturable	***16.6810***	***$471,839***	***$471,839***
Total	***71.5712***	***$6,669,332***	***$1,084,672***

For a complete breakdown of the captured millages and developer reimbursement please see "Table 2" and "Table 3."

I. Legal Description, Property Map, Statement of Qualifying Characteristics and Personal Property (Sec. 13 (1)(h))

The legal description of the Property included in this Plan is attached in Appendix A.

Property location maps are included in Appendix B.

Documentation of characteristics that qualify the property as eligible property is provided in Appendix D.

J. Displacement/Relocation of Individuals on Eligible Property (Sec. 13 (1)(i-l))

No displacement of residents or families is expected as part of this project.

K. Local Site Remediation Revolving Fund ("LSRRF") (Sec. 13 (1)(m))

The OCBRA has established a Local Site Remediation Revolving Fund (LSRRF). Capture for the LSRRF is included in this plan for five (5) years following developer reimbursement, currently

estimated at $858,434. The funds deposited into the LSRRF as part of this Plan will be used in accordance with the requirements of Act 381, as amended.

L. Other Material that the Authority or Governing Body Considers Pertinent (Sec. 13 (1)(n))

The Brownfield Redevelopment Authority and the County Commission as the Governing Body, in accordance with the Act, may amend this Plan in order to fund additional eligible activities associated with the Project described herein.

Appendix A

PM ENVIRONMENTAL Environmental & Engineering Services

City of Ferndale

Legal Description: 3351 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-201-005

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 252

Legal Description: 3281 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-201-012

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 259

Legal Description: 3265 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-201-013

T1N, R11E, SEC 27 WOODWARD HTS ROYAL OAK ADD LOTS 260 TO 266 INCL

Legal Description: 3155 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-201-015

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOTS 269 TO 272 INCL

Legal Description: 3291 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-201-019

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOTS 253 TO 258 INCL

Legal Description: 660 E TEN MILE RD, FERNDALE, MI Parcel Number: 25-27-201-020

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOTS 248 TO 251 INCL EXC THAT PART TAKEN FOR I-696 HWY & DESC AS LYING NLY OF LINE DESC AS BEG AT NW COR OF LOT 251 TH SELY TO POINT ON E LINE OF LOT 251 LOC NLY 97 FT FROM SE COR OF LOT 251, TH SELY TO POINT ON W LINE OF LOT 248 LOC NLY 58 FT FROM SW COR OF LOT 248, TH ELY 29 FT AT RIGHT ANGLE TO W LINE OF LOT 248, TH SLY TO POINT ON S LINE OFLOT 248 LOC 35 FT ELY OF SW COR OF LOT 248, TH ELY 5.00 FT TO POINT OF ENDING 1/7/85 FR 017

Legal Description: 3350 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-202-008

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 244, ALSO 1/2 OF VAC ALLEY ADJ TO SAME

Legal Description: 3342 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-202-009

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 243

Legal Description: 3334 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-202-010

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 242

Legal Description: 3310 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-202-013

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 243

Legal Description: 3300 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-202-014

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 238

Legal Description: 3252 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-202-018

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 234

Legal Description: 3242 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-202-019

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 233

Legal Description: 3232 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-202-020

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 232

Legal Description: 3224 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-202-021

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 231

Legal Description: 3216 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-202-022

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 230

Legal Description: 3206 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-202-023

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 229

Legal Description: 3164 BERMUDA ST, FERNDALE, MI Parcel Number: 25-27-202-024

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOT 228

Legal Description: BERMUDA (formerly 700-710 E TEN MILE ROAD), FERNDALE, MI
Parcel Number: 25-27-202-052

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOTS 246 & 247, ALSO 1/2 OF VAC ALLEY ADJ TO SAME09/25/84 FR 001 & 002

Legal Description: BERMUDA (formerly 3262-3280 BERMUDA ST), FERNDALE, MI
Parcel Number: 25-27-202-053

T1N, R11E, SEC 27 WOODWARD HEIGHTS ROYAL OAK ADD LOTS 235, 236 & 237 11-9-90 FR 015, 016 & 017

City of Pleasant Ridge

Legal Description: 404 E TEN MILE RD, PLEASANT RIDGE, MI Parcel Number: 25-27-127-009

T1N, R11E, SEC 27 STEPHENSON-BARBER R O SUB NO 3 LOTS 266, 267, 268 & PART OF LOT 269, ALSO PART OF NW 1/4 ALL BEING DESC AS BEG AT NE COR OF SD LOT 266,TH N 89-11-00 W 277.56 FT ALG S LINE OF TEN MILE RD, TH S 03-59-40 W 47.81 FT, TH S 27-39-20 E 400.39 FT, TH S 89-11-00 E 95.49 FT TO SE COR OF LOT 269, TH N 400 FT TO BEG

Legal Description: 660 E TEN MILE RD, PLEASANT RIDGE, MI Parcel Number: 25-27-127-010

T1N, R11E, SEC 27 STEPHENSON BARBER ROYAL OAK SUB NO 3 LOTS 261 TO 265 INCL, ALSO E 1/2 OF S 50 FT OF VAC BARBER AVE ADJ TO SD LOT 261, ALSO PART OF NW 1/4 OF SEC 27 BEG AT SE COR OF LOT 261 OF SD 'STEPHENSON BARBER ROYAL OAK SUB NO 3', TH S 575.86 FT ALG W LINE OF 'WOODWARD HEIGHTS ROYAL OAK ADD', TH N 28-28-15 W 606 FT, TH N 67-55-00 E 123 FT, TH S 89-11-00 E 175 FT TO BEG 12-3-15 CORR

Legal Description: 400 E TEN MILE RD, PLEASANT RIDGE, MI Parcel Number: 25-27-127-012

T1N, R11E, SEC 27 PART OF NE 1/4 OF NW 1/4 BEG AT PT DIST N 89-11-00 W 277.52 FT FROM INTER OF S LINE OF TEN MILE RD & W LINE OF BARBER AVE, TH S 03-59-40 W 48.59 FT, TH S 27-38-00 E 334.18 FT, TH SLY ALG W LINE OF 'STEPHENSON-BARBER ROYAL OAKSUB NO 3' TO SW COR OF LOT 270 OF SD SUB, TH ELY TO SE COR OF SD LOT, TH S 67-55-00 W 123 FT TO ELY R/W LINE GTRR, TH NW ALG SD R/W 631 FT, TH ELY 135.50 FT TO BEG 1.68 A

Legal Description: NO ADDRESS, PLEASANT RIDGE, MI Parcel Number: 25-27-127-013

T1N, R11E, SEC 27 STEPHENSON BARBER ROYAL OAK SUB NO 3 TRIANGULAR PART OF LOT 269 MEAS 29.51 FT ON S LOT LI & MEAS 59.43 FT ON W LOT LI, ALSO ALL OF LOT 270, ALSO W 1/2 OF VAC S 50 FT OF BARBER AVE ADJ TO SD LOT 270 10-18-89 CORR

Appendix B

PM ENVIRONMENTAL Environmental & Engineering Services

Property Map

2 Foot Contours
5 Foot Contours
FEMA Base Flood Elevations
FEMA Cross Sections
100 yr - FEMA Floodplain
100 yr (detailed) - FEMA Floodplain
500 yr - FEMA Floodplain
FLOODWAY - FEMA Floodplain

Disclaimer: The information provided herewith has been compiled from recorded deeds, plats, tax maps, surveys and other public records. It is not a legally recorded map or survey and is not intended to be used as one. Users should consult the information sources mentioned above when questions arise. FEMA Flooplain data may not always be present on the map.

OAKLAND COUNTY MICHIGAN
Economic Development & Community Affairs

L. Brooks Patterson
Oakland County Executive

Date Created: 4/25/2016

NORTH

1 inch = 200 feet

Oakland County One Stop Shop 2100 Pontiac Lake Road Bldg. 41 West Waterford, MI 48328 Phone: 248-858-0721 Web: www.advantageoakland.com

Appendix C

PM ENVIRONMENTAL Environmental & Engineering Services

PM ENVIRONMENTAL
Risk Well Managed

Environmental & Engineering Services Nationwide

BASELINE ENVIRONMENTAL ASSESSMENT

404 East 10 Mile Road | Pleasant Ridge, Michigan
PM Project Number 01-5706-1-0002

Prepared for:

Iron Ridge Office LLC
520 North Main Street
Royal Oak, Michigan 48067

Prepared by:

PM Environmental, Inc.
4080 West 11 Mile Road
Berkley, Michigan 48072

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t: 248.336.9988

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f: 877.884.6775
t: 517.321.3331

Grand Rapids
560 5th Street NW,
Suite 301
Grand Rapids, MI 49504
f: 877.884.6775
t: 616.285.8857

April 3, 2017

District Supervisor
Michigan Department of Environmental Quality
Southeast Michigan District Office
27700 Donald Court
Warren, Michigan 48092

RE: Baseline Environmental Assessment for the Commercial Property Located at 404 East 10 Mile Road, Pleasant Ridge, Michigan
Parcel ID: 25-27-127-009
PM Environmental, Inc. Project No. 01-5706-1-0002

Dear District Supervisor:

Enclosed is a copy of the Baseline Environmental Assessment prepared for the above referenced subject property in accordance with Section 20126(1)(c) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994, as amended.

If you have any questions regarding the information in this report, please contact us at 800-313-2966.

Sincerely,
PM ENVIRONMENTAL, INC.

Jamie Antoniewicz, P.E.
Project Engineer

J. Adam Patton, CHMM
Manager - Site Investigation Services

Enclosure

PM ENVIRONMENTAL
Risk Well Managed

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Grand Rapids
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Suite 301
Grand Rapids, MI 49504
f: 877.884.6775
t: 616.285.8857

April 3, 2017

Mr. Gregory Cooksey
Iron Ridge Office LLC
520 North Main Street
Royal Oak, Michigan 48067

RE: Baseline Environmental Assessment for the Commercial Property Located at 404 East 10 Mile Road, Pleasant Ridge, Michigan
Parcel ID: 25-27-127-009
PM Environmental, Inc. Project No. 01-5706-1-0002

Dear Mr. Cooksey:

Enclosed is a copy of the Baseline Environmental Assessment prepared for the above referenced subject property in accordance with Section 20126(1)(c) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994, as amended.

THIS BASELINE ENVIRONMENTAL ASSESSMENT WAS PERFORMED FOR THE EXCLUSIVE USE OF IRON RIDGE OFFICE LLC AND OAKLAND COUNTY, EACH OF WHOM MAY RELY ON THE REPORT'S CONTENTS.

If you have any questions regarding the information in this report, please contact our office at 800-313-2966.

Sincerely,
PM ENVIRONMENTAL, INC.

Jamie Antoniewicz, P.E.
Project Engineer

J. Adam Patton, CHMM
Manager - Site Investigation Services

Enclosure

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION AND DISCUSSION

PM Environmental, Inc. (PM) completed a Baseline Environmental Assessment (BEA) for the commercial property (Parcel ID: 25-27-127-009) located at 404 East 10 Mile Road, Pleasant Ridge, Oakland County, Michigan 48069 (hereafter referred to as the "subject property"; Figure 1) in accordance with Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994, as amended.

The subject property is identified as 404 East 10 Mile Road, Pleasant Ridge, Michigan, and consists of one 1.875 acre parcel (Figure 1). The subject property is developed with a 40,329 square foot commercial building. The building is mainly one-story with the central portion consisting of four stories and a basement (Figure 2). The property is currently zoned RO: Restricted Access.

Standard and other historical sources documented that the subject property was developed prior to 1940, and likely in 1933 based on Sanborn maps, with the northern and western-central portions of the current building. Additions were constructed in the 1960s, 1970s and 1990s to complete the current layout. The southern portion of the subject property was also occupied by a coal yard from at least the 1950s through late 1960s.

The northern portion of the subject building was occupied by Michigan Bell and utilized for service garages and machine shops in at least the 1950s. Additionally, the building contained an egg distributor in the 1950s. In the 1960s, the property was occupied by Frank's Nursery and utilized for warehousing of retail products, and by the late 1960s the building was occupied by Walmet Division of Valenite, Inc. The west-central portion of the subject building was formerly occupied by manufacturing operations in at least the 1950s and potentially as early as the 1930s. The building was occupied by Walmet by the 1960s. A tool house was located on the southern portion of the property in at least the 1960s. Between 1974 and 1980, the current southern lobby area was developed in the area of the former tool house. Operations associated with Walmet consisted of manufacturing of carbides and included tooling and extrusion. The building was vacated by Walmet in 1994, and remained vacant through the 1990s. The building has been occupied by professional offices since approximately 2000. Additionally, a portion of the northern building has been utilized for storage and limited fabrication of acoustical materials from approximately 2000 to 2016.

1.1 Owner/Operator Information

Iron Ridge Office LLC, 47 Oxford Road, Grosse Pointe, Michigan 48236, intends to purchase the subject property on or after April 7, 2017.

1.2 Intended Use of the Subject Property

Iron Ridge Office LLC intends to lease the property to commercial tenants.

1.3 Summary of All Appropriate Inquiry Phase I Environmental Assessment

PM completed a Phase I Environmental Site Assessment (ESA) dated March 30, 2017, in conformance with the scope and limitations of ASTM Practice E 1527-13 (i.e., the 'ASTM Standard'). A copy of the March 2017 Phase I ESA, including photographs of the subject property, is included in Appendix A.

The following recognized environmental conditions (RECs) were identified in PM's March 2017 Phase I ESA:

- The southern portion of the subject property was occupied by a coal yard from at least the 1950s through the 1960s and the subject property was utilized for manufacturing operations from the 1960s until the 1990s. Previous site assessment activities completed in 1995 and 2015 document soil and groundwater contamination exists on-site above the current Part 201 Residential and Nonresidential Generic Cleanup Criteria. Based on these analytical results, the subject property would be classified as a facility, as defined by Part 201 of P.A. 451 of the Michigan NREPA, as amended.

- Analytical results from 1995, 2015, and 2016 identified polychlorinated biphenyls (PCBs) above Toxic Substance Control Act (TSCA) subpart D cleanup standards, up to and including concentrations requiring removal, and a BEA will not provide the purchaser liability protection under TSCA.

No adjoining and/or nearby RECs were identified.

1.3.1 Phase I ESA Exceptions or Deletions

There were no exceptions or deletions from the Federal All Appropriate Inquiry Rule under 40 CFR 312, or the ASTM Standard during the completion of PM's March 2017 Phase I ESA and no special terms or conditions applied to the preparation of the Phase I ESA.

1.3.2 Phase I ESA Data Gaps

PM did not identify any significant data gaps during the completion of the March 2017 Phase I ESA.

1.4 Summary of Previous Subsurface Site Investigations

PM reviewed the following previous environmental reports for the subject property. Relevant portions of the reports are available in the Phase I ESA in Appendix A or within Michigan Department of Environmental Quality (MDEQ) records.

Name of Report	Date of Report	Company that Prepared Report
Phase I ESA	October 5, 1993	Applied Science & Technology, Inc. (ASTI)
Subsurface Investigation	April 20, 1995	ASTI
Category D BEA	August 23, 1995	Integrated Environmental, Inc. (IE)
Phase I ESA	December 23, 2014	PM
Phase II ESA	June 14, 2016	PM

The Phase I ESA conducted in 1994 was conducted when the Walmet Division of Valenite, Inc. still occupied the subject property. The report documented that Valenite, Inc. and its related companies had occupied the subject property since 1956. Limited historical information reviewed was consistent with this report. Documented operations consisted of extruding or pressing carbide-grade powder, which was then hardened in a furnace. The Phase I ESA also included the west adjoining property, which in the report is identified as Building #3.

ASTI identified concerns related to the long term manufacturing operations, floor drains in the manufacturing areas, and the removal of the former underground storage tanks (USTs) with no documentation of sampling, as potential areas of concern.

Based on these concerns, the subsurface investigation was conducted by ASTI in 1995. Site assessment activities included advancement of soil borings in the areas of concern identified, and collection of soil and groundwater samples for laboratory analysis of volatile organic compounds (VOCs), polynuclear aromatic compounds (PNAs), PCBs, and metals. Analytical results documented various concentrations of contaminants above the current Part 201 Generic Cleanup Criteria on the subject property and the west adjoining property. Based on these analytical results, the BEA was conducted for the current owner.

A summary of the analytical results from the previous site investigations are included on Figures 3A and 4A and in Tables 1 through 3.

On July 2, 2015, PM completed a scope of work consisting of the advancement of 16 soil borings (SB-1 through SB-16) and the installation of five temporary monitoring wells (TMW-1, TMW-4, TMW-6, TMW-15, and TMW-16) to assess the RECs identified in PM's December 2014 Phase I ESA. A total of 19 soil and five groundwater samples were analyzed for VOCs, PNAs, PCBs, and metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc), or some combination thereof.

Analytical results from the July 2015 sampling event identified PCB concentrations above TSCA subpart D cleanup standards. Additional investigations were conducted in August, September, and November 2015 and May 2016 that included of the advancement of 41 soil borings (SB-1R, SB-3R, and SB-17 through SB-55) and the collection of soil samples for analysis of PCBs to further define the area of PCB impact identified in July 2015. Refer to Section 2.0 for a summary of the analytical results from the previous investigations.

1.5 Geology and Hydrogeology

Based on review of soil boring logs prepared by PM, the soil stratigraphy generally consists of loose sand and/or clayey sand to a depth of 6.0 to 12.0 feet bgs underlain by silty clay or clay to a depth of at least 20.0 feet bgs. Soils associated with the identified PCB impact were generally black or gray stained/discolored. Limited, perched, and discontinuous groundwater was encountered between 7.0 and 11.0 feet bgs.

Soil boring/temporary monitoring well logs depicting the soil stratigraphy and PID readings are included in Appendix B.

2.0 LOCATION OF CONTAMINATED MEDIA ON THE SUBJECT PROPERTY

The analytical results for the samples collected during site investigation activities were compared with the MDEQ Generic Cleanup Criteria and Screening Levels as presented in Part 201 Rules 299.1 through 299.50, dated December 30, 2013 entitled “Cleanup Criteria Requirements for Response Activity”, in accordance with Section 20120a(1) using the Residential and Nonresidential cleanup criteria.

Shallow groundwater (i.e. less than three meters bgs) analytical results were compared to Vapor Intrusions Screening Levels (VISLs) presented in the May 2013 MDEQ Guidance Document for the Vapor Intrusion Pathway.

PCB analytical results were further compared to TSCA subpart D cleanup standards as summarized below:

	No Action	Appropriate Cap w/Deed Restriction	Removal Required
High Occupancy Area (≥335 hours/year)	≤1 ppm	>1 to ≤10 ppm	>10 ppm
Low Occupancy Area (<335 hours/year)	≤25 ppm w/ deed restriction	>25 to ≤100 ppm	>100 ppm

Laboratory analytical reports from PM's 2015 and 2016 site investigation are included in Appendix C.

2.1 Summary of Soil/Groundwater Analytical Results – July 2015

The table below summarizes exceedances of cleanup criteria in the soil and groundwater samples collected by PM for soil borings SB-1 through SB-16.

SUMMARY OF ANALYTICAL RESULTS

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen Depth and [DTW] (feet bgs)	Analysis	Objectives	Part 201 Cleanup Criteria Exceedances	
					Soil	Groundwater
SB/TMW-1 (10.0)	2.0-3.0	5.6-10.6 [9.45]	VOCs, PNAs, PCBs, metals	Assess former manufacturing operations	**SVII/VSI/PSI/ DC/TSCA:** PCBs	NONE
SB-2 (15.0)	2.0-3.0	NA	VOCs, PNAs, PCBs, arsenic	Assess former coal yard, west adjoining property, and previously identified PCB impact	**DWP/GSIP:** 1,1,1-trichloroethane, arsenic **DC(R)** PCBs, arsenic **TSCA:** PCBs	NA
SB-3 (15.0)	2.0-3.0	NA	VOCs, PNAs, PCBs, metals	Assess former coal yard	**DWP/GSIP:** 1,1,1-trichloroethane **DC(R/NR)/ TSCA:** PCBs	NA
SB/TMW-4 (20.0)	4.0-5.0	9.6-14.6 [10.75]	VOCs, PNAs, PCBs, metals	Assess former coal yard and east adjoining property	NONE	NONE

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen Depth and [DTW] (feet bgs)	Analysis	Objectives	Part 201 Cleanup Criteria Exceedances	
					Soil	Groundwater
SB-5 (10.0)	4.0-5.0 and 9.0-10.0	NA	VOCs, PNAs, PCBs, metals	Assess former machine shop, manufacturing operations, floor drain and previous identified VOC impact	NONE	NA
SB/TMW-6* (20.0)	1.0-2.0	8.5-13.5 [9.61]	VOCs, PNAs, PCBs, arsenic	Assess west adjoining property and previously identified PCB impact	**DWP/GSIP:** 1,1,1-trichloroethane **SVII/VSI/PSI/ DC/TSCA:** PCBs	NONE
	4.0-5.0				NONE	
SB-7 (10.0)	2.0-3.0	NA	VOCs, PNAs, PCBs, metals	Assess former machine shop and manufacturing operations	**DWP/GSIP/ DC(R):** arsenic	NA
SB-8 (15.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, arsenic	Assess west adjoining property and previously identified arsenic impact	NONE	NA
SB-9 (5.0)	2.0-3.0	NA	VOCs, PNAs, PCBs, metals	Assess former manufacturing operations and previously identified arsenic impact	NONE	NA
SB-10 (9.0)	2.0-3.0	NA	VOCs, PNAs, PCBs, metals	Assess former machine shop	NONE	NA
SB-11 (10.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess former manufacturing operations, former garage, and previously identified arsenic impact	**DWP/GSIP/ DC(R):** arsenic	NA
SB-12 (15.0)	4.0-5.0	NA	VOCs, PNAs, PCBs, metals	Assess former manufacturing operations and former garage	NONE	NA

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen Depth and [DTW] (feet bgs)	Analysis	Objectives	Part 201 Cleanup Criteria Exceedances	
					Soil	Groundwater
SB-13 (15.0)	1.0-2.0 and 4.0-5.0	NA	VOCs, PNAs, PCBs, metals	Assess former manufacturing operations and former garage	NONE	NA
SB-14 (15.0)	5.0-6.0	NA	VOCs, PNAs, PCBs, metals	Assess previously identified arsenic and PCB concentrations	**DWP/GSIP/ DC(R):** arsenic	NA
SB/TMW-15 (15.0)	1.0-2.0	5.9-10.9 [7.70]	VOCs, PNAs, PCBs, metals	Assess former coal yard	**DC(R):** lead	NONE
SB/TMW-16 (20.0)	2.0-3.0	8.5-13.5 [8.98]	VOCs, PNAs, PCBs, metals	Assess east adjoining property and previously identified PCB concentrations	**DWP/GSIP:** 1,1,1-trichloroethane	NONE

DW/P – Drinking Water/ Protection
GSI/P – Groundwater Surface Water Interface/ Protection
SVII – Soil Volatilization to Indoor Air Inhalation
DC – Direct Contact
VSI – Ambient Air Volatile Soil Inhalation
PSI – Particulate Soil Inhalation
R – Residential
NR – Nonresidential
***** Boring location is not within the property boundary

2.1.1 Summary of Soil Analytical Results - July 2015

The soil analytical results are summarized on Figure 3B and in Tables 4 and 5.

Soil analytical results identified concentrations of 1,1,1-trichloroethane in SB-2, SB-6, and SB-16 above Part 201 Residential and Nonresidential DWP and GSIP cleanup criteria. Concentrations of VOCs in the remaining soil samples are below laboratory method detection limits (MDLs) and/or the most restrictive Part 201 Residential cleanup criteria.

Soil analytical results identified concentrations of PNAs in SB-3 and SB-15 below the most restrictive Part 201 Residential cleanup criteria. No concentrations of PNAs were identified in the remaining soil samples above laboratory MDLs.

Refer to Section 6.3 for a summary of the PCB analytical results.

Soil analytical results identified concentrations of arsenic in SB-2, SB-7, SB-11, and SB-14 above Part 201 Residential and Nonresidential DWP, GSIP, and Residential DC cleanup criteria. A concentration of lead was identified in SB-15 above Part 201 Residential DC cleanup criteria. Concentrations of the remaining metals are below the Statewide Default Background Levels (SDBLs) and/or the most restrictive Part 201 Residential cleanup criteria.

2.1.2 Summary of Groundwater Analytical Results – July 2015

The groundwater analytical results are summarized on Figure 4B and in Table 6.

Groundwater analytical results identified concentrations of 1,1,1-trichloroethane and/or 1,1-dichloroethane in samples collected from TMW-1, TMW-4, TMW-6, and TMW-15 below the most restrictive Part 201 Residential cleanup criteria. No concentrations of VOCs were identified in the remaining groundwater samples above laboratory MDLs.

No concentrations of PNAs were identified in any of the groundwater samples above laboratory MDLs.

No concentrations of metals were identified in any of the groundwater samples above the most restrictive Part 201 Residential cleanup criteria.

2.2 Summary of Soil Analytical Results – PCBs (1995-2016)

The analytical results from the PCB sampling and delineation activities are summarized on Figures 5A and 5B and in Table 7.

The table below summarizes the PCB analytical results as compared to TSCA subpart D cleanup standards with considerations for low or high occupancy areas.

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	PCB Concentration (mg/kg)	TSCA Cleanup Levels Based on Occupancy Areas (mg/kg) Action Applicable (Yes/No)					
			No Action		Maintain cap with institutional control		Removal Required	
			High	Low	High	Low	High	Low
			(≤1)	(≤25)	(>1 to ≤10)	(>25 to ≤100)	(>10)	(>100)
March and July 1995, ASTI and IE								
B1-1	2.0-4.0	<0.33	**YES**	**YES**	-	-	-	-
B3-1	0.0-2.0	<0.33	**YES**	**YES**	-	-	-	-
B13-4	6.0-8.0	0.43	**YES**	**YES**	-	-	-	-
B13-5	8.0-10.0	<0.33	**YES**	**YES**	-	-	-	-
HB5	0.0-3.0	0.39	**YES**	**YES**	-	-	-	-
HB6	0.0-3.0	**17**	No	**YES**	No	-	**YES**	-
HB7	0.0-3.0	0.93	**YES**	**YES**	-	-	-	-
HB8	0.0-3.0	0.86	**YES**	**YES**	-	-	-	-
HB9	0.0-3.0	0.39	**YES**	**YES**	-	-	-	-
B16-1	0.0-2.0	<0.33	**YES**	**YES**	-	-	-	-
B16-3	4.0-6.0	<0.33	**YES**	**YES**	-	-	-	-
B17-1	0.0-2.0	<0.33	**YES**	**YES**	-	-	-	-
B17-3	4.0-6.0	<0.33	**YES**	**YES**	-	-	-	-
B18-1	0.0-2.0	0.44	**YES**	**YES**	-	-	-	-
B18-3	4.0-6.0	<0.33	**YES**	**YES**	-	-	-	-
B19-2	2.0-4.0	<0.33	**YES**	**YES**	-	-	-	-
B19-3	4.0-6.0	<0.33	**YES**	**YES**	-	-	-	-
B20-1	0.0-2.0	<0.33	**YES**	**YES**	-	-	-	-
B20-4	6.0-8.0	<0.33	**YES**	**YES**	-	-	-	-

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	PCB Concentration (mg/kg)	TSCA Cleanup Levels Based on Occupancy Areas (mg/kg) Action Applicable (Yes/No)					
			No Action		Maintain cap with institutional control		Removal Required	
			High	Low	High	Low	High	Low
			(≤1)	(≤25)	(>1 to ≤10)	(>25 to ≤100)	(>10)	(>100)
July, August, and November 2015 and May 2016, PM								
SB-1	2.0-3.0	**11,000**	No	No	No	No	**YES**	**YES**
SB-1R	5.0-6.0	**7.4**	No	**YES**	**YES**	-	-	-
SB-1R	8.5-9.5	**247**	No	No	No	No	**YES**	**YES**
SB-2	2.0-3.0	**5.4**	No	**YES**	**YES**	-	-	-
SB-3	2.0-3.0	**23**	No	**YES**	No	-	**YES**	-
SB-3R	8.5-9.5	<0.33	**YES**	**YES**	-	-	-	-
SB-4	4.0-5.0	<0.33	**YES**	**YES**	-	-	-	-
SB-5	4.0-5.0	<0.33	**YES**	**YES**	-	-	-	-
SB-5	9.0-10.0	<0.33	**YES**	**YES**	-	-	-	-
SB-6*	1.0-2.0	**880**	No	No	No	No	**YES**	**YES**
SB-6*	4.0-5.0	<0.33	**YES**	**YES**	-	-	-	-
SB-7	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-8	1.0-2.0	<0.33	**YES**	**YES**	-	-	-	-
SB-9	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-10	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-11	1.0-2.0	<0.33	**YES**	**YES**	-	-	-	-
SB-12	4.0-5.0	<0.33	**YES**	**YES**	-	-	-	-
SB-13	1.0-2.0	<0.33	**YES**	**YES**	-	-	-	-
SB-13	4.0-5.0	<0.33	**YES**	**YES**	-	-	-	-
SB-14	5.0-6.0	0.43	**YES**	**YES**	-	-	-	-
SB-15	1.0-2.0	<0.33	**YES**	**YES**	-	-	-	-
SB-16	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-17	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-17	9.0-10.0	<0.33	**YES**	**YES**	-	-	-	-
SB-18	1.0-2.0	**44**	No	No	No	**YES**	**YES**	-
SB-18	2.0-3.0	**16**	No	**YES**	No	-	**YES**	-
SB-18	7.5-8.5	<0.33	**YES**	**YES**	-	-	-	-
SB-19	1.0-2.0	**20**	No	**YES**	No	-	**YES**	-
SB-19	2.0-3.0	**24**	No	**YES**	No	-	**YES**	-
SB-19	4.5-5.5	**10**	No	**YES**	**YES**	-	-	-
SB-19	6.5-7.5	<0.33	**YES**	**YES**	-	-	-	-
SB-20	1.0-2.0	**16**	No	**YES**	No	-	**YES**	-
SB-20	2.0-3.0	**43**	No	No	No	**YES**	**YES**	-
SB-20	7.0-8.0	<0.33	**YES**	**YES**	-	-	-	-
SB-21	2.0-30	<0.33	**YES**	**YES**	-	-	-	-
SB-22	2.0-3.0	**6**	No	**YES**	**YES**	-	-	-
SB-22	8.0-9.0	<0.33	**YES**	**YES**	-	-	-	-
SB-23	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-23	9.0-10.0	<0.33	**YES**	**YES**	-	-	-	-
SB-24	1.0-2.0	**6,188**	No	No	No	No	**YES**	**YES**
SB-24	8.0-9.0	<0.33	**YES**	**YES**	-	-	-	-

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	PCB Concentration (mg/kg)	TSCA Cleanup Levels Based on Occupancy Areas (mg/kg) Action Applicable (Yes/No)					
			No Action		Maintain cap with institutional control		Removal Required	
			High	Low	High	Low	High	Low
			(≤1)	(≤25)	(>1 to ≤10)	(>25 to ≤100)	(>10)	(>100)
SB-25	1.0-2.0	**7**	No	**YES**	**YES**	-	-	-
SB-25	2.0-3.0	**19**	No	**YES**	No	-	**YES**	-
SB-25	9.0-10.0	**1.2**	No	**YES**	**YES**	-	-	-
SB-26	2.0-3.0	**2.3**	No	**YES**	**YES**	-	-	-
SB-26	9.0-10.0	<0.33	**YES**	**YES**	-	-	-	-
SB-27	1.0-2.0	**15**	No	**YES**	No	-	**YES**	-
SB-27	2.0-3.0	**12**	No	**YES**	No	-	**YES**	-
SB-27	5.0-6.0	**9**	No	**YES**	**YES**	-	-	-
SB-28	1.0-2.0	**7**	No	**YES**	**YES**	-	-	-
SB-28	2.0-3.0	**14**	No	**YES**	No	-	**YES**	-
SB-28	7.0-8.0	<0.33	**YES**	**YES**	-	-	-	-
SB-29	2.0-3.0	**10**	No	**YES**	**YES**	-	-	-
SB-29	6.5-7.5	<0.33	**YES**	**YES**	-	-	-	-
SB-30	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-30	7.5-8.5	<0.33	**YES**	**YES**	-	-	-	-
SB-31	2.0-3.0	**1.8**	No	**YES**	**YES**	-	-	-
SB-32	2.0-3.0	**4.3**	No	**YES**	**YES**	-	-	-
SB-32	3.5-4.5	<0.33	**YES**	**YES**	-	-	-	-
SB-33	1.0-2.0	<0.33	**YES**	**YES**	-	-	-	-
SB-34	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-34	7.5-8.5	<0.33	**YES**	**YES**	-	-	-	-
SB-35	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-35	7.0-8.0	<0.33	**YES**	**YES**	-	-	-	-
SB-36	2.0-3.0	0.3	**YES**	**YES**	-	-	-	-
SB-36	7.0-8.0	0.25	**YES**	**YES**	-	-	-	-
SB-37	2.0-3.0	**1.8**	No	**YES**	**YES**	**-**	-	-
SB-37	8.0-9.0	<0.33	**YES**	**YES**	-	-	-	-
SB-38	2.0-3.0	**170**	No	No	No	No	**YES**	**YES**
SB-38	5.0-6.0	<0.33	**YES**	**YES**	-	-	-	-
SB-39	2.0-3.0	**10,800**	No	No	No	No	**YES**	**YES**
SB-39	5.0-6.0	**4.9**	No	**YES**	**YES**	-	-	-
SB-40	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-40	5.0-6.0	<0.33	**YES**	**YES**	-	-	-	-
SB-40	8.5-9.5	**2,015**	No	No	No	No	**YES**	**YES**
SB-41	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-41	5.0-6.0	<0.33	**YES**	**YES**	-	-	-	-
SB-41	8.0-9.0	<0.33	**YES**	**YES**	-	-	-	-
SB-42	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-43	1.0-2.0	0.6	**YES**	**YES**	-	-	-	-
SB-43	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-43	5.0-6.0	<0.33	**YES**	**YES**	-	-	-	-
SB-44	1.0-2.0	0.7	**YES**	**YES**	-	-	-	-

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	PCB Concentration (mg/kg)	TSCA Cleanup Levels Based on Occupancy Areas (mg/kg) Action Applicable (Yes/No)					
			No Action		Maintain cap with institutional control		Removal Required	
			High	Low	High	Low	High	Low
			(≤1)	(≤25)	(>1 to ≤10)	(>25 to ≤100)	(>10)	(>100)
SB-44	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-45	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-46	2.0-3.0	**11**	No	**YES**	No	-	**YES**	-
SB-46	5.0-6.0	**9**	No	**YES**	**YES**	-	-	-
SB-47	2.0-3.0	**21**	No	**YES**	No	-	**YES**	-
SB-47	6.5-7.5	<0.33	**YES**	**YES**	-	-	-	-
SB-48	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-49	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-50	0.5-1.5	**13**	No	**YES**	No	-	**YES**	-
SB-50	4.0-5.0	<0.33	**YES**	**YES**	-	-	-	-
SB-51	0.5-1.5	<0.33	**YES**	**YES**	-	-	-	-
SB-52	1.0-2.0	**32.6**	No	No	No	**YES**	**YES**	-
SB-52	2.0-3.0	0.94	**YES**	**YES**	-	-	-	-
SB-53	1.0-2.0	**54.9**	No	No	No	**YES**	**YES**	-
SB-53	2.0-3.0	**15**	No	**YES**	No	-	**YES**	-
SB-53	5.0-6.0	<0.33	**YES**	**YES**	-	-	-	-
SB-55	1.0-2.0	0.44	**YES**	**YES**	-	-	-	-
SB-54	1.0-2.0	**1.18**	No	**YES**	**YES**	-	-	-
SB-54	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-55	2.0-3.0	<0.33	**YES**	**YES**	-	-	-	-
SB-55	5.0-6.0	<0.33	**YES**	**YES**	-	-	-	-

mg/kg – micrograms/kilogram
* Boring location is not located within the subject property boundary upon review of available information

2.3 Subject Property Facility Status

A location where a hazardous substance is present in excess of the concentrations that satisfy the requirements of subsection 20120a(1)(a) or (17), is a facility pursuant to Part 201. Section 20120a(1)(a) requirements are the cleanup criteria for unrestricted residential usage.

Contaminant concentrations identified in soil and groundwater on the subject property indicate exceedances to the Part 201 Residential and Nonresidential DWP, GSIP, SVII, VSI, PSI, and DC cleanup criteria. Therefore, the subject property is a facility under Part 201 of P.A. 451, as amended, and the rules promulgated thereunder.

3.0 PROPERTY INFORMATION

3.1 Legal Description of Subject Property

A copy of the legal description is included in Appendix Das part of the assessing information.

3.2 Map of Subject Property

Refer to Figure 1, Property Location Map; and Figure 2, Generalized Diagram of the Subject Property and Surrounding Area which depicts the property/parcel boundaries.

3.3 Subject Location and Analytical Summary Maps

Figures 3 through 5 provide scaled maps of the subject property with site structures and sampling locations with analytical results.

3.4 Subject Property Location Map

Figures 1 and 2 provide scaled area maps depicting the subject property location in relation to the surrounding area.

3.5 Subject Property Address

As indicated in Section 1.0, the subject property (Parcel ID: 25-27-127-009) is located at 404 East 10 Mile Road, Pleasant Ridge, Oakland County, Michigan 48069.

3.6 Subject Spatial Data

As depicted in Figure 1, the subject property is located in township one North (T.1N), range 11 East (R.11E), and section 27, northwest quarter, northeast quarter-quarter in Pleasant Ridge, Oakland County, Michigan.

According to the MDEQ Groundwater Mapping Project Website, the center of the subject property is located at latitude 42.4748 and a longitude of -83.1347.

4.0 FACILITY STATUS OF SUBJECT PROPERTY

As indicated in Section 2.0, based upon documented exceedances of the Part 201 Residential and Nonresidential DWP, GSIP, SVII, VSI, PSI, and DC cleanup criteria in samples collected from the subject property, the subject property is a facility as defined under Part 201 of P.A. 451, as amended, and the rules promulgated thereunder.

4.1 Summary Data Tables

The analytical results were compared with the MDEQ Generic Cleanup Criteria and Screening Levels as presented in Part 201 Rules 299.1 through 299.50, dated December 30, 2013 entitled "Cleanup Criteria Requirements for Response Activity" in accordance with Section 20120a(1) using the Residential and Nonresidential cleanup criteria. Shallow groundwater (i.e. less than three meters bgs) analytical results were compared to VISLs presented in the May 2013 MDEQ Guidance Document for the Vapor Intrusion Pathway. PCB analytical results were further compared to TSCA subpart D cleanup standards.

The analytical results for compounds exceeding Part 201 cleanup criteria are summarized in Section 2.0. A summary of the analytical results are in Tables 1 through 7.

4.2 Laboratory Reports and Chain of Custody Documentation

Samples collected by PM in 2015 and 2016 were submitted to Brighton Analytical LLC, Brighton, Michigan and Merit Laboratories, East Lansing, Michigan for chemical analysis under chain of custody procedures and within applicable holding times. A copy of the laboratory analytical reports from site investigations conducted by PM are included in Appendix C.

5.0 IDENTIFICATION OF BEA AUTHOR

This BEA was conducted on April 3, 2017, by Mr. Jamie Antoniewicz, P.E., Project Engineer, and reviewed by Mr. J. Adam Patton, Manager – Site Investigation Services, PM Environmental, Inc., which is prior to or within 45 days of becoming the property owner or operator. Qualification statements are provided as Appendix E.

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature and history of the subject property. We have developed and performed the all appropriate inquires in conformance with the standards and practices set forth in 40 CFR Part 312.

Jamie Antoniewicz, P.E.
Project Engineer

J. Adam Patton, CHMM
Manager - Site Investigation Services

6.0 AAI REPORT OR ASTM PHASE I ESA

As indicated in Section 1.3, PM completed a Phase I ESA dated March 30, 2017, in conformance with the scope and limitations of ASTM Practice E 1527-13, for the subject property (Parcel ID: 25-27-127-009) located at 404 East 10 Mile Road, Pleasant Ridge, Oakland County, Michigan 48069. The scope of the Phase I ESA included consideration of hazardous substances as defined in Section 20101(1)(x) of P.A 451 of 1994, as amended, and constituted the performance of an All Appropriate Inquiry in conformance with the standards and practices set forth in 40 CFR Part 312.

A copy of the March 2017 Phase I ESA is included in Appendix A.

7.0 REFERENCES

- Michigan Department of Environmental Quality (MDEQ) Generic Cleanup Criteria and Screening Levels as presented in Part 201 Rules 299.1 through 299.50, dated December 30, 2013 entitled "Cleanup Criteria Requirements for Response Activity";
- MDEQ Operational Memorandum No. 4 "Site Characterization and Remediation Verification – Attachment 10, Peer Review Draft Groundwater Not in an Aquifer," February 2007;
- MDEQ Operational Memorandum No. 2 "Sampling and Analysis," October 22, 2004, Revised July 5, 2007;
- MDEQ May 2013 Guidance Document for the Vapor Intrusion Pathway;
- Baseline Environmental Submittal Form (EQP 4025), September 2015;
- Phase I ESA, October 5, 1993, Applied Science & Technology, Inc. (ASTI);
- Subsurface Investigation, April 20, 1995, ASTI;
- Category D BEA, August 23, 1995, Integrated Environmental, Inc. (IE);
- Phase I ESA, December 23, 2014, PM;
- Phase II ESA, June 14, 2016, PM; and
- Phase I ESA, March 30, 2017, PM.

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BASELINE ENVIRONMENTAL ASSESSMENT

660 East 10 Mile Road | Ferndale, Michigan
PM Project Number 01-5524-0-001

Prepared for:

Iron Ridge Holdings, LLC
47 Oxford Road
Grosse Pointe, Michigan 48236

Prepared by:

PM Environmental, Inc.
4080 West Eleven Mile Road
Berkley, MI 48072

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December 10, 2015

District Supervisor
Michigan Department of Environmental Quality
Southeastern Michigan District Office
27700 Donald Court
Warren, Michigan 48092

RE: Baseline Environmental Assessment for the Industrial Property Located at 660 East 10 Mile Road, Ferndale, Michigan
PM Environmental, Inc. Project No. 01-5524-0-001

Dear District Supervisor:

Enclosed is a copy of the Baseline Environmental Assessment prepared for the above referenced subject property in accordance with Section 20126(1)(c) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994 (Part 201), as amended.

If you have any questions regarding the information in this report, please contact us at 800-313-2966.

Sincerely,
PM ENVIRONMENTAL, INC.

Jamie Antoniewicz, P.E.
Project Engineer

Jennifer L. Ritchie, C.P.G.
Regional Site Investigation Manager

Enclosure

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December 10, 2015

Mr. Greg Cooksey
Iron Ridge Holdings, LLC
47 Oxford Road
Grosse Pointe, Michigan 48236

RE: Baseline Environmental Assessment for the Industrial Property Located at 660 East 10 Mile Road, Ferndale, Michigan
PM Environmental, Inc. Project No. 01-5524-0-001

Dear Mr. Cooksey:

Enclosed is a copy of the above-referenced document prepared in accordance with Section 20126(1)(c) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994 (Part 201), as amended.

THIS BASELINE ENVIRONMENTAL ASSESSMENT WAS PERFORMED FOR THE EXCLUSIVE USE OF IRON RIDGE HOLDINGS, LLC, WHO MAY RELY ON THE REPORT'S CONTENTS.

If you have any questions regarding the information in this report, please contact our office at 800-313-2966.

Sincerely,
PM ENVIRONMENTAL, INC.

Jamie Antoniewicz, P.E.
Project Engineer

Jennifer L. Ritchie, C.P.G.
Regional Site Investigation Manager

Enclosure

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1.0 INTRODUCTION AND DISCUSSION

PM Environmental, Inc. (PM) completed a Baseline Environmental Assessment (BEA) for the industrial property located at 660 East 10 Mile Road, Ferndale/Pleasant Ridge, Oakland County, Michigan 48220/48069 (hereafter referred to as the "subject property"; Figure 1).

The subject property consists of nine parcels located in Ferndale and Pleasant Ridge (Figure 2). For ease of reference, PM has identified the property under its main address, 660 East 10 Mile Road, but the entire nine parcels included in this BEA are as follows:

Parcel ID Number	Address	City	Acreage	Building Size (sf)	Property Use
25-27-127-010	660 East 10 Mile Road	Pleasant Ridge	3.47	73,817	Vacant industrial building
25-27-201-020	660 East 10 Mile Road	Ferndale	0.29	6,036	Limited office operations for Walker Wire
25-27-201-013	3265 Bermuda Street	Ferndale	1.139	23,953	Vacant industrial building
25-27-201-005	3351 Bermuda Street	Ferndale	0.169	1,125	Office building utilized for general storage
25-27-201-019	3291 Bermuda Street	Ferndale	1.00	No structures	Surface parking lot
25-27-201-012	3281 Bermuda Street	Ferndale	0.165	2,602	Hazardous materials storage building
25-27-201-015	3155 Bermuda Street	Ferndale	0.75	18,516	Industrial building by a landscaping and snow removal company for storage of road salt and equipment and for general storage
25-27-127-012	400 East 10 Mile Road	Pleasant Ridge	1.10	17,752	Vacant industrial building
25-27-127-013	None	Pleasant Ridge	0.33	No structures	Surface parking lot

The main subject parcels, identified as 660 East 10 Mile Road (Ferndale and Pleasant Ridge) were initially developed prior to 1940 with dwellings. Industrial development began in the northern portion of the property in the mid-1940s, with the beginning of Walker Wire's operations. Multiple additions were constructed to the building through the early 1990s to expand the layout to the current building. The building was occupied by various wire and steel companies, mainly identified as Walker Wire Company, from initial development in the 1940s until the mid-2000s. Operations included wire cutting, stretching, and chemical treatment.

The southern portion of the main parcel (660 East 10 Mile Road) was utilized by Michigan Bell for telephone pole storage from at least 1949 until at least 1957. No evidence of chemical treatment (i.e. bulk chemical storage) was observed, and the area appeared to be for pole and equipment storage only.

The subject parcel identified as 3351 Bermuda Street was initially developed in the 1940s with the current building. The building was occupied by a W.E. Foltz Company from at least 1950 until 1975, and consisted of a small machine shop. Fire department records included documentation that the operations utilized trichloroethylene. The building was purchased by Walker Wire in the early 1980s, and utilized as an employment office since that time.

The subject parcel identified as 3291 Bermuda Street was initially developed prior to 1940 with dwellings. A small tin shop was constructed on the property in the mid-1960s. All former buildings were demolished by 1980 when the parcel was converted to the current concrete paved surface lot for Walker Wire.

The subject parcel identified as 3281 Bermuda Street was initially developed prior to 1940 with a dwelling, which was demolished in the late 1970s when the parcel was converted to a concrete paved storage lot for Walker Wire. The current hazardous materials storage building was constructed on the western portion of the parcel in 1992. The concrete floors in the building were observed to be in good condition, and interviews with representatives of Walker Wire document that the building was mainly used for used oil storage and dry bags of chemicals, and no significant solvent storage occurred in the building.

The subject parcel identified as 3265 Bermuda Street was initially developed with portions of the current building constructed in the mid-1940s. Various additions were constructed in the 1950s and 1980s. Former occupants included machinery manufacturers and tooling companies through the 1980s, with documented solvent use in Fire department records. The building has been occupied by Walker Wire since that time.

The subject parcel identified as 3155 Bermuda Street was initially developed in the mid-1940s with portions of the current industrial building, with additions in the 1950s. The property was occupied by a nut and bolt manufacturer from at least 1950 until 1985. The building has been generally utilized for limited warehousing and storage by Walker Wire since that time.

The western subject parcels, identified as 400 East 10 Mile Road and associated parking lot, were initially developed prior to 1940 with a coal and fuel storage and sales operation. These operations ceased in the late 1970s, and the former silos were demolished and the current building was constructed. The current building at 400 East 10 Mile Road was utilized for manufacturing operations from the 1970s until 1990s, associated with 404 East 10 Mile Road (carbide company). These operations ceased in the late 1990s, and the building has been utilized for mostly warehousing with limited manufacturing by Walker Wire since the late 1990s. Former operations included stamping and presses. A small office building was present in the northwestern portion of the parcel, which was demolished between 2005 and 2008 to create more parking space for the adjoining property (404 East 10 Mile Road).

1.1 Owner/Operator Information

Iron Ridge Holdings, LLC, 47 Oxford Road, Grosse Pointe, Michigan 48236, purchased the property on December 4, 2015.

1.2 Intended Use of the Subject Property

Iron Ridge Holdings, LLC intends to redevelop the property for retail and general commercial use.

1.3 Summary of All Appropriate Inquiry Phase I Environmental Assessment

PM completed a Phase I Environmental Site Assessment (ESA) for the subject property, dated November 30, 2015, in conformance with the scope and limitations of ASTM Practice E 1527-13 (i.e., the 'ASTM Standard'). A copy of the November 2015 Phase I ESA, including photographs of the subject property, is included in Appendix A.

The Phase I ESA also included 12 parcels located east of Bermuda Street; however, no RECs were identified with the parcels and are therefore excluded from this BEA.

The following recognized environmental conditions (RECs) were identified in PM's November 2015 Phase I ESA:

- The western portion of the subject property, identified as 400 East 10 Mile Road, 660 East 10 Mile Road, 3155 Bermuda Street, and 3265-3351 Bermuda Street, was historically occupied by various machine shops and manufacturing operations from the 1940s until the 2000s. Review of previous site assessments conducted in 1995 and 2015 document concentrations of various metals, polynuclear aromatic compounds (PNAs), and volatile organic compounds (VOCs) were detected in the soil and/or groundwater samples above the current Part 201 Residential and Nonresidential Drinking Water Protection (DWP) and Groundwater Surface Water Interface Protection (GSIP) Generic Cleanup Criteria (GCC). Additionally, concentrations of arsenic, polychlorinated biphenyls (PCBs), and benzo(a)pyrene were detected in soil samples above the current Part 201 Residential and/or Nonresidential Direct Contact GCC. Finally, cis-1,2-dichloroethylene and vinyl chloride were detected in groundwater above Vapor Intrusion Screening Levels (VISLs) in the vicinity of the former UST basin associated with 660 East 10 Mile Road. Based on these analytical results, the subject property would be classified as a "facility," as defined by Part 201 of P.A. 451 of the Michigan Natural Resources Environmental Protection Act (NREPA), as amended.

- Review of previous site assessment activities performed on the western parcel of the subject property documents concentrations of PCBs above the current Part 201 Residential Soil Direct Contact GCC and US EPA Toxic Substance Control Act (TSCA) Nonresidential cleanup standards in the vicinity of the central adjoining property (404 East 10 Mile Road). PCB contamination is not covered under the Michigan Department of Environmental Quality (MDEQ) liability protection afforded under a Baseline Environmental Assessment (BEA), and the known PCB contamination remains a concern.

The following adjoining REC was identified:

- The central adjoining property, identified as 404 East 10 Mile Road and located between 400 and 660 East 10 Mile Road, was occupied by manufacturing operations from at least the 1950s until 1990s. Previous subsurface investigations on the subject property document soil contamination above current Part 201 GCC along the eastern, southern, and western property boundary, which may be a result of migration from the central adjoining property.

1.3.1 Phase I ESA Exceptions or Deletions

There were no exceptions or deletions from the Federal All Appropriate Inquiry Rule under 40 CFR 312, or the ASTM Standard during the completion of PM's November 2015 Phase I ESA and no special terms or conditions applied to the preparation of the Phase I ESA.

1.3.2 Phase I ESA Data Gaps

PM did not identify any significant data gaps during the completion of the November 2015 Phase I ESA.

1.4 Summary of Previous Site Investigations

PM reviewed a previous Phase I ESA completed for the subject parcel identified as 400 East 10 Mile Road and the adjoining property located at 404 East 10 Mile Road by Applied Science and Technology, Inc. (ASTI) and dated October 5, 1993. The subject property is identified as Building 3 in the report, and at the time of the Phase I ESA was connected to 404 East 10 Mile Road via a catwalk, and was owned and operated by Walmet. Operations included general stamping and pressing. Two concerns were identified on the subject property parcel, which consisted of exterior staining at the southeast corner of the building, and a former 10,000-gallon used coolant oil UST removed from the eastern property boundary in the late 1980s with no confirmatory sampling completed.

PM also reviewed a Subsurface Investigation report prepared by ASTI for 400 and 404 East 10 Mile Road and dated April 20, 1995. The site assessment activities were performed to assess concerns identified in the 1993 Phase I ESA. Specifically, four soil borings were advanced in the southeastern portion to assess surficial staining, and seven soil borings were advanced in the former UST basin. A boring was also advanced in the northeastern portion of the property, for collection of a background sample.

No evidence of a release was identified in the former UST basin area, and no subsurface contamination was identified in this area. Therefore, PM considers the UST adequately assessed and no further investigation is recommended.

PM completed a Phase I ESA for the subject property in February 2015. The Phase I ESA identified the following RECs:

- The main subject building, identified as 660 East 10 Mile Road, was occupied by various wire and steel companies, mainly identified as Walker Wire Company, from initial development in the 1940s until the mid-2000s. Various additions has been constructed to the building to expand the original portion, located in the northwestern portion, to the south for the current layout. Operations included wire cutting, stretching, and chemical treatment. PM observed cracked and pitted floors in multiple former production areas. Historical interior waste streams associated with the former tooling operations would have consisted of general hazardous substances and/or petroleum products. A significant portion of this time period preceded major environmental regulations and current waste management and disposal procedures. The potential exists that a release occurred associated with these former operations and negatively impacted the subsurface.

- PM observed significant staining at the base of a steel coil holder in the western–central portion of the main subject building. The on-site manager indicated that steel coils were sprayed with oils prior to shipment, and that these operations were likely performed in this area since the 1990s. Based on the significant staining and length of operations, the potential exists that a release has occurred in this area and negatively impacted the subsurface.

- PM observed three 55-gallon drums of new oil and coolant in a secondary containment area in the western-central portion of 660 East 10 Mile Road. Significant staining was observed in the area, and the concrete floors were pitted and cracked. Mr. Craig indicated that the drum storage has been present since at least the 1990s. Based on the observed site conditions and length of time of operations, the potential exists that a release has occurred in this area and negatively impacted the subsurface.

- Floor drains were observed in various production areas of 660 East 10 Mile Road. Mr. Craig indicated that none of the drains were located in areas of former chemical storage, and most are sealed. No staining was observed. However, the long term operations associated with the building and unknown waste management practices associated with the floor drains may be a source of subsurface contamination.

- The eastern central portion of the main subject building contained an acid bath and rinse system from 1972 until the mid-2000s. Concrete pits were observed under the baths that contained chemicals for the operations, and staining / evidence of spills was observed during the site reconnaissance. Based on the length of time operations and observed site conditions, the potential exists that a release has occurred in this area and negatively impacted the subsurface.

- A wastewater treatment plant was present in the western-central portion of the property, which was installed in the 1990s to treat waste water generated in the acid bath and rinse section. Prior the 1990s, water was reportedly discharged to the sanitary sewer system. PM observed closed drains and cracked concrete in the waste water treatment area. Based on the length of time operations and observed site conditions, the potential exists that a release has occurred in this area and negatively impacted the subsurface.

- The northeastern subject building, identified as 3351 Bermuda Street, was initially developed in the 1940s and was occupied by a machine shop from at least 1950 until 1975. Fire department records included documentation that the operations utilized trichloroethylene. Historical interior waste streams associated with the former tooling operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The potential exists that a release occurred associated with these former operations and negatively impacted the subsurface.

- Fire inspection records for 3351 Bermuda Street document that the building was formerly occupied by W.E. Foltz Company from at least 1958 until 1972 and was heated with fuel oil stored in two 220-gallon aboveground storage tanks located at the “outside rear” of the building. Based on the length of time of use and lack of documentation of sufficient containment, the potential exists that a release of fuel oil has occurred.

- The eastern-central portion of the subject building, identified as 3265 Bermuda Street, was initially developed in the mid-1940s, with additions to the southern portion in the 1950s. Former occupants included machinery manufacturers and tooling companies through the 1980s, with documented solvent use in Fire department records. Historical interior waste streams associated with the former tooling operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The potential exists that a release occurred associated with these former operations and negatively impacted the subsurface.

- Fire inspection records for 3265 Bermuda Street from 1958 until 1972 document that the building was heated with fuel oil stored in a 1,000-gallon UST, but the location was not indicated. The potential exists for an orphan fuel oil UST to be present on the parcel identified as 3265 Bermuda Street and/or for a release of fuel oil to have occurred.

- The southeastern building of the subject property, identified as 3155 Bermuda, was initially developed in the mid-1940s with portions of the current industrial building, with additions in the 1950s. The property was occupied by a nut and bolt manufacturer from at least 1950 until 1985. Historical interior waste streams associated with the former tooling operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The potential exists that a release occurred associated with these former operations and negatively impacted the subsurface.

- The western portion of the subject property, identified as 400 East 10 Mile Road, was occupied by a coal yard from at least 1940 until the late 1960s, with unpaved coal storage areas throughout the property. The potential exists for subsurface contamination to be present from leaching of heavy metals, hazardous substances and/or petroleum products from these long term operations.

- The current building on the western portion of the subject property was occupied by manufacturing operations, reportedly associated with a carbide company that occupied the east adjoining property (404 East 10 Mile Road) from at least the 1970s until 1990s. Operations included stamping and presses. Historical interior waste streams associated with the former tooling operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The potential exists that a release occurred associated with these former operations and negatively impacted the subsurface.

- Review of previous site assessment activities performed on the western parcel of the subject property (400 East 10 Mile Road) in 1995 document concentrations of polychlorinated biphenyls (PCBs) above the current Part 201 Residential Soil Direct Contact Generic Cleanup Criteria and US EPA Toxic Substance Control Act (TSCA) Nonresidential cleanup standards. PCB contamination is not covered under the Michigan Department of Environmental Quality (MDEQ) liability protection afforded under a Baseline Environmental Assessment (BEA), and the known PCB contamination remains a concern.

- Review of previous site assessment activities performed on the western parcel of the subject property (400 East 10 Mile Road) in 1995 document concentrations of various metals were detected in the soil samples collected from the southeastern portion of the property above the state default background levels and current Part 201 Residential and Nonresidential Drinking Water Protection and Groundwater Surface Water Interface Protection Generic Cleanup Criteria (GCC). Additionally, concentrations of arsenic were detected in soil samples collected above the current Part 201 Residential Direct Contact GCC, but below the Nonresidential Direct Contact GCC. Based on these analytical results, the subject property would be classified as a "facility," as defined by Part 201 of P.A. 451 of the Michigan Natural Resources Environmental Protection Act (NREPA), as amended.

The following adjoining RECs were identified:

- The central adjoining property, identified as 404 East 10 Mile Road and located between 400 and 660 East 10 Mile Road, was occupied by manufacturing operations from at least the 1950s until 1990s. Previous subsurface investigations on the property in 1995 document soil contamination above current Part 201 GCC along the eastern property boundary, which has not been delineated in the direction of the subject property. The potential exists for known contamination to have migrated onto the subject property.

The central adjoining property, identified as 3205 Bermuda Street and located between two parcels of the subject property along Bermuda Street, has been occupied by machinery and compressor rebuilding companies since at least 1960, and was occupied by a bottling company from at least 1950 until 1957. Long term interior waste streams would have included hazardous substances and/or petroleum products. The building and operations directly abuts subject property boundaries. The potential exists that a release has occurred and migrated onto the subject property and impacted the subsurface.

1.5 Current Site Investigation

Prior to the commencement of field activities, MISSDIG, a utility locating service, was contacted to locate utilities on or adjacent to the subject property. Utilities were marked by the respective utility companies where they entered or were located adjacent to the subject property. Ground penetrating radar (GPR) was utilized for clear the soil boring locations of utilities.

1.5.1 Geophysical Investigation

On June 8, 2015, PM completed a GPR survey at the 3265 Bermuda Street parcel (Figure 2) to investigate the potential for orphan USTs.

No anomalies consistent with the presence of orphan USTs were identified during the geophysical survey investigation. The complete Geophysical Investigation Survey Report is included in Appendix B.

1.5.2 Subsurface Investigation

Between June 8 and 10, 2015, PM completed a scope of work to assess RECs identified in PM's February 2015 Phase I ESA consisting of the advancement of 34 soil borings (SB-1 through SB-34), installation of 19 temporary monitoring wells (TMW-3, TMW-5, TMW-8 through TMW-11, TMW-13, TMW-14, TMW-16, TMW-19, TMW-21, TMW-24, TMW-27, and TMW-29

though TMW-34), and the collection of 31 soil and 19 groundwater samples, which were submitted to Merit Laboratories, Inc., East Lansing, Michigan for analysis of volatile organic compounds (VOCs), PNAs, PCBs, metals (arsenic, cadmium, chromium, lead, and/or zinc), pH, or some combination thereof.

On September 1, 2015, PM completed a scope of work consisting of the advancement of 12 soil borings (SB-27R, SB-35 through SB-45) to evaluate PCB concentrations along the property boundary.

The table below summarizes the Phase II ESA activities including total depth, objective of the soil borings, and sample justification. Refer to Figures 3 and 4 for soil boring/temporary monitoring well locations.

DESCRIPTION OF SOIL BORING/TEMPORARY MONITORING WELL LOCATIONS

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen and [DTW] (feet bgs)	Analysis	Objectives	Sample Selection (justification)
SB-1 (10.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations in the main building	**Soil:** Sample collected from drain depth based on the lack of field evidence of contamination. **GW:** Not encountered.
SB-2 (15.0)	2.0-3.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations and drain in the main building	**Soil:** Shallow drain depth sample collected based on the lack of field evidence of contamination. **GW:** Not encountered.
SB/TMW-3 (15.0)	0.5-1.5	2.09-7.09 [4.22]	VOCs, PNAs, PCBs, metals	Assess former operations and drain in 660 East 10 Mile	**Soil:** Shallow sample collected based on the lack of field evidence of contamination and the presence of shallow groundwater. **GW:** Sampled.
SB-4 (15.0)	2.0-3.0 and 5.0-6.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations and drain in the main building	**Soil:** Samples collected from the shallow and deeper sand/clay interface based on the lack of field evidence of contamination. **GW:** Not encountered.
SB-5 (20.0)	0.5-1.5	3.29-8.29 [5.07]	VOCs, PNAs, PCBs, metals	Assess former operations in the main building	**Soil:** Shallow sample collected based on the lack of field evidence of contamination. **GW:** Sampled.
SB-6 (15.0)	0.5-1.5 and 6.0-7.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations in the main building	**Soil:** Shallow and sand/clay interface samples collected based on the lack of field evidence of contamination. **GW:** Not encountered.

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen and [DTW] (feet bgs)	Analysis	Objectives	Sample Selection (justification)
SB-7 (10.0)	3.0-4.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations in the main building	**Soil:** Sand/clay interface sample collected based on the lack of field evidence of contamination. **GW:** Not encountered.
SB/TMW-8 (20.0)	NA	4.45-9.45 [5.80]	VOCs, PNAs, metals, pH	Assess acid line and pits in the southern portion of the main building	**Soil:** Soil sample not collected based on the lack of field evidence of contamination. **GW:** Sampled.
SB/TMW-9 (20.0)	NA	4.75-9.75 [5.00]	VOCs, PNAs, metals, pH	Assess acid line and pits in the southern portion of the main building	**Soil:** Soil sample not collected based on the lack of field evidence of contamination and the presence of shallow groundwater. **GW:** Sampled.
SB/TMW-10 (15.0)	NA	4.15-9.15 [4.75]	VOCs, PNAs, metals	Assess wastewater treatment plant	**Soil:** Soil sample not collected based on the lack of field evidence of contamination and the presence of shallow groundwater. **GW:** Sampled.
SB/TMW-11 (9.5)	NA	3.91-8.91 [4.98]	VOCs, PNAs, metals	Assess wastewater treatment plant	**Soil:** Soil sample not collected based on the lack of field evidence of contamination and the presence of shallow groundwater. **GW:** Sampled.
SB-12 (15.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess exterior storage and nearby chemical storage room	**Soil:** Shallow sample collected based on the lack of field evidence of contamination. **GW:** Not sampled.
SB/TMW-13 (15.0)	1.0-2.0	2.84-7.84 [3.52]	VOCs, PNAs, metals, pH	Assess acid recovery room	**Soil:** Shallow sample collected based on the lack of field evidence of contamination and the presence of shallow groundwater. **GW:** Sampled.
SB/TMW-14 (15.0)	0.5-1.5	2.72-7.72 [4.09]	VOCs, PNAs, PCBs, metals	Assess former operations and drain in the main building	**Soil:** Shallow sample collected based on the lack of field evidence of contamination. **GW:** Sampled.

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen and [DTW] (feet bgs)	Analysis	Objectives	Sample Selection (justification)
SB-15 (10.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess testing lab in the main building	**Soil:** Shallow sample collected based on the lack of field evidence of contamination. **GW:** Not sampled.
SB/TMW-16 (15.0)	1.0-2.0	3.05-8.05 [4.36]	VOCs, PNAs, PCBs, metals	Assess location of suspect UST and former operations in the main building	**Soil:** Sample collected from the interval with the highest PID reading (8.9 ppm). **GW:** Sampled.
SB-17 (15.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess location of suspect UST and former operations in the main building	**Soil:** Sample collected from the interval with the highest PID reading (3.2 ppm). **GW:** Not sampled.
SB-18 (6.0)	2.0-3.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations at 3351 Bermuda Street	**Soil:** Sample collected from the interval with the highest PID reading (0.6 ppm). **GW:** Not encountered.
SB/TMW-19 (15.0)	6.0-7.0	4.15-9.15 [4.55]	VOCs and PNAs	Assess former operations and former AST at 3351 Bermuda Street	**Soil:** Sample collected from the interval with the highest PID reading (392 ppm). **GW:** Sampled.
SB-20 (10.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations at 3155 Bermuda Street and potential for migration from 3205 Bermuda Street	**Soil:** Shallow sample collected based on the lack of field evidence of contamination. **GW:** Not sampled based on the lack of field evidence of contamination.
SB/TMW-21 (15.0)	1.0-2.0	3.55-8.55 [5.40]	VOCs, PNAs, PCBs, metals	Assess former operations at 3155 Bermuda Street	**Soil:** Shallow sample collected based on the lack of field evidence of contamination and the presence of shallow groundwater. **GW:** Sampled.
SB-22 (10.0)	1.0-2.0	NA	PNAs, PCBs, metals	Assess former operations at 3155 Bermuda Street	**Soil:** Shallow sample collected based on the lack of field evidence of contamination. **GW:** Not sampled based on the lack of field evidence of contamination.
SB-23 (4.0)	3.0-4.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations at 400 East 10 Mile	**Soil:** Sand/clay interface sample collected based on the lack of field evidence of contamination. **GW:** Not encountered.

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen and [DTW] (feet bgs)	Analysis	Objectives	Sample Selection (justification)
SB/TMW-24 (15.0)	3.0-4.0	8.06-13.06 [9.69]	VOCs, PNAs, PCBs, metals	Assess former operations at 400 East 10 Mile	**Soil:** Sand/clay interface sample collected based on the lack of field evidence of contamination. **GW:** Sampled.
SB-25 (15.0)	4.0-5.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations at 400 East 10 Mile	**Soil:** Sand/clay interface sample collected based on the lack of field evidence of contamination. **GW:** Not sampled based on the lack of field evidence of contamination.
SB-26 (10.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations at 400 East 10 Mile and former coal storage	**Soil:** Shallow sample collected based on the lack of field evidence of contamination. **GW:** Not sampled based on the lack of field evidence of contamination.
SB/TMW-27/R (15.0)	1.0-2.0 and 2.0-3.0	5.0-10.0 [6.55]	VOCs, PNAs, PCBs, metals	Assess former coal storage on the western portion of the property	**Soil:** Shallow sample collected based on the lack of field evidence of contamination and presence of shallow groundwater. **GW:** Sampled.
SB-28 (15.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess former coal storage on the western portion of the property	**Soil:** Shallow sample collected based on the lack of field evidence of contamination. **GW:** Not encountered.
SB/TMW-29 (15.0)	1.0-2.0	5.0-10.0 [7.45]	VOCs, PNAs, PCBs, metals	Assess former coal storage on the western portion of the property	**Soil:** Shallow sample collected based on the lack of field evidence of contamination and presence of shallow groundwater. **GW:** Sampled.
SB/TMW-30 (15.0)	1.0-2.0	2.86-7.86 [4.63]	VOCs, PNAs, PCBs, metals	Assess former coal storage on the western portion of the property	**Soil:** Shallow sample collected based on the lack of field evidence of contamination and presence of shallow groundwater. **GW:** Sampled.
SB/TMW-31 (20.0)	3.0-4.0	3.55-8.55 [4.15]	VOCs, PNAs, PCBs	Assess potential for migration from 404 East 10 Mile	**Soil:** Shallow sample collected based on the lack of field evidence of contamination and presence of shallow groundwater. **GW:** Sampled.

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen and [DTW] (feet bgs)	Analysis	Objectives	Sample Selection (justification)
SB/TMW-32 (10.0)	NA	3.96-8.96 [5.20]	VOCs and PNAs	Assess potential for migration from 3205 Bermuda Street	**Soil:** Soil sample not collected based on the lack of field evidence of contamination and presence of shallow groundwater. **GW:** Sampled.
SB/TMW-33 (15.0)	NA	3.75-8.75 [5.10]	VOCs and PNAs	Assess potential for migration from 3205 Bermuda Street	**Soil:** Soil sample not collected based on the lack of field evidence of contamination and presence of shallow groundwater. **GW:** Sampled.
SB/TMW-34 (15.0)	1.0-2.0	4.46-9.46 [5.80]	VOCs, PNAs, PCBs	Assess potential for migration from 404 East 10 Mile and previously identified PCB concentrations	**Soil:** Shallow sample collected based on the lack of field evidence of contamination and previous sample depth. **GW:** Sampled.
SB-35 (5.0)	2.0-3.0 and 4.0-5.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**Soil:** Samples collected based on previous identified impact and/or field observations. **GW:** Not encountered.
SB-36 (5.0)	2.0-3.0 and 4.0-5.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**Soil:** Samples collected based on previous identified impact and/or field observations. **GW:** Not encountered.
SB-37 (5.0)	1.0-2.0 and 4.0-5.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**Soil:** Samples collected based on previous identified impact and/or field observations. **GW:** Not encountered.
SB-38 (5.0)	1.0-2.0 and 4.0-5.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**Soil:** Samples collected based on previous identified impact and/or field observations. **GW:** Not encountered.
SB-39 (5.0)	1.0-2.0 and 2.0-3.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**Soil:** Samples collected based on previous identified impact and/or field observations. **GW:** Not encountered.
SB-40 (5.0)	1.0-2.0 and 4.0-5.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**Soil:** Samples collected based on previous identified impact and/or field observations. **GW:** Not encountered.

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen and [DTW] (feet bgs)	Analysis	Objectives	Sample Selection (justification)
SB-41 (5.0)	1.0-2.0, 2.0-3.0, and 4.0-5.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**Soil:** Samples collected based on previous identified impact and/or field observations. **GW:** Not encountered.
SB-42 (5.0)	1.0-2.0 and 2.0-3.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**Soil:** Samples collected based on previous identified impact and/or field observations. **GW:** Not encountered.
SB-43 (5.0)	1.0-2.0 and 2.0-3.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**Soil:** Samples collected based on previous identified impact and/or field observations. **GW:** Not encountered.
SB-44 (5.0)	1.0-2.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**Soil:** Samples collected based on previous identified impact and/or field observations. **GW:** Not encountered.
SB-45 (5.0)	1.0-2.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**Soil:** Samples collected based on previous identified impact and/or field observations. **GW:** Not encountered.

GW – Groundwater NA – Not Applicable ppm – parts per million
bgs – below ground surface DTW – depth to water PID – photoionization detector

1.5.3 Investigation Techniques and QA/QC Procedures

The soil borings were advanced to the desired depth using a direct push drill rig and/or stainless steel hand auger. Soil sampling was performed for soil classification, verification of subsurface geologic conditions, and for investigating the potential and/or extent of soil and groundwater contamination at the subject property.

During drilling operations, the drilling equipment was cleaned to minimize the possibility of cross contamination. These procedures included cleaning equipment with a phosphate free solution (i.e., Alconox®) and rinsing with distilled water after each sample collection. Drilling and sampling equipment was also cleaned in this manner prior to initiating field activities.

Soils collected from discrete sample intervals were screened using a PID to determine if VOCs were present. Soil from specific depths was placed in plastic bags, sealed, and allowed to volatilize. The headspace within each bag was then monitored with the PID. The PID is able to detect trace levels of organic compounds in the air space within the plastic bag. The PID utilizes a 10.6 electron volts (eV) lamp. Soil samples were collected from the soil borings based upon the highest PID reading, visual/olfactory evidence, a change in geology, surficial soil, and/or directly above saturated soil.

Soil samples for VOC analysis were preserved with methanol, in accordance with United States Environmental Protection Agency (USEPA) method 5035. The soil samples were placed in appropriately labeled containers with Teflon lined lids and/or sanitized glass jars, placed in an ice packed cooler, and transported under chain of custody procedures for laboratory analysis within applicable holding times.

Temporary monitoring wells were installed to collect a groundwater samples for chemical analysis. A new well assembly was used for the temporary wells, consisting of a 5-foot long, one-inch diameter, 0.010-inch slot, schedule 40, PVC screen and a 1-inch diameter PVC casing. After the screen for the well was set to the desired depth, natural sands were allowed to collapse around the well screen. Each well was developed using either a new disposable 0.9-inch diameter bailer or peristaltic pump equipped with new, chemically inert, 3/8-inch diameter polyethylene and silicon tubing. Well development was performed by purging until clear, turbid free, groundwater was observed coming from the well.

Groundwater samples were placed in appropriately labeled containers, placed in an ice packed cooler, and transported under chain of custody procedures for laboratory analysis within applicable holding times.

Upon completion of the investigation, the temporary well materials were removed from the soil boring and the soil borings were abandoned by placing the soil cuttings back into the borehole, filling the void with bentonite chips, hydrating the chips, resurfacing and returning the area to its pre-drilling condition.

1.6 Geology and Hydrogeology

Based upon onsite observations of soil samples and cuttings collected from the soil borings that were advanced at the subject property by PM, the general soil stratigraphy consists of clayey sand to a depth of approximately 4.0 to 6.0 feet bgs, sand to a depth of 6.0 to 9.0 feet bgs, underlain by medium stiff clay to a depth of at least 20.0 feet bgs, the maximum depth explored. Perched, limited and discontinuous groundwater was encountered in the sand layer encountered between 4.0 and 9.0 feet bgs.

Soil boring logs depicting the soil stratigraphy and PID readings are included in Appendix C.

2.0 LOCATION OF CONTAMINATED MEDIA ON THE SUBJECT PROPERTY

The analytical results for the soil and groundwater samples collected during site investigation activities conducted by PM were compared with the MDEQ Generic Cleanup Criteria and Screening Levels as presented in Part 201 Rules 299.1 through 299.50, dated December 30, 2013 entitled “Cleanup Criteria Requirements for Response Activity”, in accordance with Section 20120a(1) using the Residential and Nonresidential cleanup criteria. When applicable, analytical results were compared to Vapor Intrusion Screening Level (VISLs) presented in the May 2013 MDEQ Guidance Document for the Vapor Intrusion Pathway.

The analytical results are summarized in Tables 1 through 4 and on Figures 3 and 4. The laboratory analytical reports are included in Appendix D.

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen Depth and [DTW] (feet bgs)	Analysis	Objectives	Part 201 Cleanup Criteria Exceedances	
					Soil	GW
SB-1 (10.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations in the main building	NONE	NA
SB-2 (15.0)	2.0-3.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations and drain in the main building	NONE	NA
SB/TMW-3 (15.0)	0.5-1.5	2.09-7.09 [4.22]	VOCs, PNAs, PCBs, metals	Assess former operations and drain in 660 East 10 Mile	NONE	NONE
SB-4 (15.0)	2.0-3.0 and 5.0-6.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations and drain in the main building	NONE	NA
SB-5 (20.0)	0.5-1.5	3.29-8.29 [5.07]	VOCs, PNAs, PCBs, metals	Assess former operations in the main building	NONE	NONE
SB-6 (15.0)	0.5-1.5 and 6.0-7.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations in the main building	NONE	NA
SB-7 (10.0)	3.0-4.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations in the main building	NONE	NA
SB/TMW-8 (20.0)	NA	4.45-9.45 [5.80]	VOCs, PNAs, metals, pH	Assess acid line and pits in the southern portion of the main building	NA	NONE
SB/TMW-9 (20.0)	NA	4.75-9.75 [5.00]	VOCs, PNAs, metals, pH	Assess acid line and pits in the southern portion of the main building	NA	NONE
SB/TMW-10 (15.0)	NA	4.15-9.15 [4.75]	VOCs, PNAs, metals	Assess wastewater treatment plant	NA	NONE
SB/TMW-11 (9.5)	NA	3.91-8.91 [4.98]	VOCs, PNAs, metals	Assess wastewater treatment plant	NA	NONE

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen Depth and [DTW] (feet bgs)	Analysis	Objectives	Part 201 Cleanup Criteria Exceedances	
					Soil	GW
SB-12 (15.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess exterior storage and nearby chemical storage room	**DWP:** Chromium **GSIP:** phenanthrene, chromium **DC(R):** benzo(a)pyrene	NA
SB/TMW-13 (15.0)	1.0-2.0	2.84-7.84 [3.52]	VOCs, PNAs, metals, pH	Assess acid recovery room	NONE	NONE
SB/TMW-14 (15.0)	0.5-1.5	2.72-7.72 [4.09]	VOCs, PNAs, PCBs, metals	Assess former operations and drain in the main building	NONE	NONE
SB-15 (10.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess testing lab in the main building	NONE	NA
SB/TMW-16 (15.0)	1.0-2.0	3.05-8.05 [4.36]	VOCs, PNAs, PCBs, metals	Assess location of suspect UST and former operations in the main building	NONE	**DW:** cis-1,2-DCE, vinyl chloride **GSI:** vinyl chloride **VISLs:** cis-1,2-DCE, vinyl chloride
SB-17 (15.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess location of suspect UST and former operations in the main building	**DWP:** TCE	NA
SB-18 (6.0)	2.0-3.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations at 3351 Bermuda Street	NONE	NA
SB/TMW-19 (15.0)	6.0-7.0	4.15-9.15 [4.55]	VOCs and PNAs	Assess former operations and former AST at 3351 Bermuda Street	**DWP:** TCE	NONE
SB-20 (10.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations at 3155 Bermuda Street and potential for migration from 3205 Bermuda Street	NONE	NA

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen Depth and [DTW] (feet bgs)	Analysis	Objectives	Part 201 Cleanup Criteria Exceedances	
					Soil	GW
SB/TMW-21 (15.0)	1.0-2.0	3.55-8.55 [5.40]	VOCs, PNAs, PCBs, metals	Assess former operations at 3155 Bermuda Street	NONE	NONE
SB-22 (10.0)	1.0-2.0	NA	PNAs, PCBs, metals	Assess former operations at 3155 Bermuda Street	**DWP:** PCE	NA
SB-23 (4.0)	3.0-4.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations at 400 East 10 Mile	NONE	NA
SB/TMW-24 (15.0)	3.0-4.0	8.06-13.06 [9.69]	VOCs, PNAs, PCBs, metals	Assess former operations at 400 East 10 Mile	**GSIP:** Fluoranthene and phenanthrene **DC(R/NR):** benzo(a)pyrene	NONE
SB-25 (15.0)	4.0-5.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations at 400 East 10 Mile	NONE	NA
SB-26 (10.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess former operations at 400 East 10 Mile and former coal storage	NONE	NA
SB/TMW-27/R (15.0)	1.0-2.0 and 2.0-3.0	5.0-10.0 [6.55]	VOCs, PNAs, PCBs, metals	Assess former coal storage on the western portion of the property	**GSIP:** Fluoranthene, phenanthrene **DC(R/NR):** benzo(a)pyrene	NONE
SB-28 (15.0)	1.0-2.0	NA	VOCs, PNAs, PCBs, metals	Assess former coal storage on the western portion of the property	NONE	NA
SB/TMW-29 (15.0)	1.0-2.0	5.0-10.0 [7.45]	VOCs, PNAs, PCBs, metals	Assess former coal storage on the western portion of the property	NONE	NONE
SB/TMW-30 (15.0)	1.0-2.0	2.86-7.86 [4.63]	VOCs, PNAs, PCBs, metals	Assess former coal storage on the western portion of the property	NONE	NONE
SB/TMW-31 (20.0)	3.0-4.0	3.55-8.55 [4.15]	VOCs, PNAs, PCBs	Assess potential for migration from 404 East 10 Mile	NONE	NONE

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen Depth and [DTW] (feet bgs)	Analysis	Objectives	Part 201 Cleanup Criteria Exceedances	
					Soil	GW
SB/TMW-32 (10.0)	NA	3.96-8.96 [5.20]	VOCs and PNAs	Assess potential for migration from 3205 Bermuda Street	NA	NONE
SB/TMW-33 (15.0)	NA	3.75-8.75 [5.10]	VOCs and PNAs	Assess potential for migration from 3205 Bermuda Street	NA	NONE
SB/TMW-34 (15.0)	1.0-2.0	4.46-9.46 [5.80]	VOCs, PNAs, PCBs	Assess potential for migration from 404 East 10 Mile and previously identified PCB concentrations	**DWP:** benzene **GSIP:** petroleum VOCs	NONE
SB-35 (5.0)	2.0-3.0 and 4.0-5.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	NONE	NA
SB-36 (5.0)	2.0-3.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**DC(TSCA):** PCBs	NA
	4.0-5.0				NONE	
SB-37 (5.0)	1.0-2.0 and 4.0-5.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	NONE	NA
SB-38 (5.0)	1.0-2.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**DC(TSCA):** PCBs	NA
	4.0-5.0				NONE	
SB-39 (5.0)	1.0-2.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**DC(TSCA):** PCBs	NA
	2.0-3.0				NONE	
SB-40 (5.0)	1.0-2.0	NA	PCBs	Assess PCB concentrations along the property	**DC(TSCA):** PCBs	NA

Location and Total Depth (feet bgs)	Soil Sample Depth (feet bgs)	TMW Screen Depth and [DTW] (feet bgs)	Analysis	Objectives	Part 201 Cleanup Criteria Exceedances	
					Soil	GW
	4.0-5.0			boundary with 404 East 10 Mile Road	NONE	
SB-41 (5.0)	1.0-2.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**DC(TSCA):** PCBs	NA
	2.0-3.0				**DC(TSCA):** PCBs	
	4.0-5.0				NONE	
SB-42 (5.0)	1.0-2.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**DC(TSCA):** PCBs	NA
	2.0-3.0				**DC(TSCA):** PCBs	
	4.0-5.0				NONE	
SB-43 (5.0)	1.0-2.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**DC(TSCA):** PCBs	NA
	2.0-3.0				**DC(TSCA):** PCBs	
	4.0-5.0				NONE	
SB-44 (5.0)	1.0-2.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	**DC(TSCA):** PCBs	NA
SB-45 (5.0)	1.0-2.0	NA	PCBs	Assess PCB concentrations along the property boundary with 404 East 10 Mile Road	NONE	NA

DW/P: drinking water/ protection
GSIP: Groundwater Surface Water Interface Protection
VISL: Vapor Intrusion Screening Level
DC: Direct Contact
R: Residential
NR: Nonresidential
PCE: tetrachloroethylene
TCE: trichloroethylene
DCE: dichloroethylene

2.1 Summary of Soil Analytical results

Soil analytical results are summarized in Tables 1 through 3 and on Figure 3.

Soil analytical results identified concentrations of PCE or TCE above Part 201 Residential and Nonresidential DWP cleanup criteria in the samples collected from SB-17, SB-19, and SB-22. A concentration of benzene in SB-34 above Part 201 Residential and Nonresidential DWP and various petroleum VOCs were identified in SB-24 above Part 201 GSIP cleanup criteria. Concentrations of various VOCs were identified in SB-15, SB-16, SB-18, SB-24, SB-26, SB-27, and SB-19 below the most restrictive Part 201 Residential cleanup criteria. No concentrations of

VOCs were identified in the remaining soil samples above laboratory method detection limits (MDLs).

Concentrations of benzo(a)pyrene were identified in SB-12, SB-24, and SB-27 above Part 201 Residential DC cleanup criteria and the concentrations in SB-24 and SB-27 were also above Nonresidential DC cleanup criteria. Concentrations of fluoranthene and/or phenanthrene were identified in SB-12, SB-24, and SB-27 above Part 201 GSIP cleanup criteria. Concentrations of various PNAs were identified in SB-5, SB-17, and SB-20 below the most restrictive Part 201 Residential cleanup criteria. No concentrations of PNAs were identified in the remaining soil samples above laboratory MDLs.

Concentrations of PCBs exceeded TSCA cleanup standards in shallow soil samples collected from SB-36 through SB-44 at concentrations between 1,300 and 489,000 µg/kg. A concentration of PCBs was identified above the laboratory MDL in SB-27 and SB-37, which are below the most restrictive Part 201 Residential cleanup criteria and TSCA cleanup standards. No concentrations of PCBs were identified above laboratory MDLs in any of the remaining soil samples collected.

Concentrations of various metals (arsenic, cadmium, chromium, lead, and/or zinc) were identified in each of the samples, where analyzed. A concentration of chromium was identified in SB-12 above Part 201 Residential and Nonresidential DWP and GSIP cleanup criteria. The remaining metal concentrations in soil are within SDBLs and/or below the most restrictive Part 201 Residential cleanup criteria.

A soil sample (SB-13) collected in the area of the acid line included a pH measurement which identified a pH of 7.63, which is not above characteristically hazardous levels.

2.2 Summary of Groundwater Analytical Results

Groundwater analytical results are summarized in Table 4 and on Figure 4.

Groundwater analytical results identified concentrations of cis-1,2-DCE and vinyl chloride in TMW-16 above Part 201 Residential and Nonresidential DW and/or GSI cleanup criteria and Residential and Nonresidential VISLs. Concentrations of various VOCs were identified in TMW-3, TMW-8, TMW-11, TNW-14, TMW-27, TMW-30, and TMW-34 below the most restrictive Part 201 Residential cleanup criteria. No concentrations of VOCs were identified in the remaining groundwater samples above laboratory MDLs.

No concentrations of PNAs were identified above laboratory MDLs in any of the groundwater samples collected.

Concentrations of various metals were identified below the most restrictive Part 201 Residential cleanup criteria.

Groundwater samples (TMW-8, 9, and 13) collected in the area of the acid line included pH measurements which identified pH ranges between 7.48 to 10.39, which are not above characteristically hazardous levels.

2.3 Subject Property Facility Status

A location where a hazardous substance is present in excess of the concentrations, which satisfy the requirements of subsection 20120a(1)(a) or (17), is a facility pursuant to Part 201. Section 20120a(1)(a) requirements are the cleanup criteria for unrestricted residential usage.

Contaminant concentrations identified on the subject property indicate exceedances to the Part 201 Residential and Nonresidential DWP/DW, GSIP/GSI, DC cleanup criteria and VISLs. Therefore, the subject property is a facility under Part 201 of P.A. 451, as amended, and the rules promulgated thereunder.

3.0 PROPERTY INFORMATION

3.1 Legal Description of Subject Property

A copy of the legal description is included in Appendix E as part of the assessing information.

3.2 Map of Subject Property

Refer to Figure 1, Property Location Map; and Figure 2, Generalized Diagram of the Subject Property and Surrounding Area which depicts the property/parcel boundaries.

3.3 Subject Location and Analytical Summary Maps

Figures 3 and 4 provide scaled maps of the subject property with site structures and sampling locations with analytical results.

3.4 Subject Property Location Map

Figures 1 and 2 provide scaled area maps depicting the subject property location in relation to the surrounding area.

3.5 Subject Property Address

As indicated in Section 1.0, the subject property is located at 660 East 10 Mile Road, Ferndale/Pleasant Ridge, Oakland County, Michigan 48220/48069 (hereafter referred to as the "subject property"; Figure 1).

The subject property consists of nine parcels located in Ferndale and Pleasant Ridge (Figure 2). For ease of reference, PM has identified the property under its main address, 660 East 10 Mile Road, but the entire nine parcels included in this BEA are as follows:

Parcel ID Number	Address	City	Acreage
25-27-127-012	400 East 10 Mile Road	Pleasant Ridge	1.10
25-27-127-013	No address identified	Pleasant Ridge	0.33
25-27-127-010	660 East 10 Mile Road	Pleasant Ridge	3.47
25-27-201-020	660 East 10 Mile Road	Ferndale	0.29
25-27-201-005	3351 Bermuda Street	Ferndale	0.169
25-27-201-019	3291 Bermuda Street	Ferndale	1.00
25-27-201-012	3281 Bermuda Street	Ferndale	0.165
25-27-201-013	3265 Bermuda Street	Ferndale	1.139
25-27-201-015	3155 Bermuda Street	Ferndale	0.75

3.6 Subject Spatial Data

As depicted in Figure 1, the subject property is located in township one North (T.1N), range 11 East (R.11E), and section 27, northwest quarter, northeast quarter-quarter in Ferndale and Pleasant Ridge, Oakland County, Michigan.

According to the MDEQ Groundwater Mapping Project Website, the center of the subject property is located at latitude 42.4740 and a longitude of -83.1343.

4.0 FACILITY STATUS OF SUBJECT PROPERTY

As indicated in Section 2.3, based upon documented exceedances of the Part 201 Residential and Nonresidential DWP/DW, GSIP/GSI, DC cleanup criteria and VISLs in soil and groundwater samples collected from the subject property, the subject property is a facility as defined under Part 201 of P.A. 451, as amended, and the rules promulgated thereunder.

4.1 Summary Data Tables

The analytical results were compared with the MDEQ Generic Cleanup Criteria and Screening Levels as presented in Part 201 Rules 299.1 through 299.50, dated December 30, 2013 entitled "Cleanup Criteria Requirements for Response Activity" in accordance with Section 20120a(1) using the Residential and Nonresidential cleanup criteria.

The analytical results for target analytes exceeding Part 201 cleanup criteria are summarized in Section 2.0. A summary of the analytical results are included in Tables 1 through 4.

4.2 Laboratory Reports and Chain of Custody Documentation

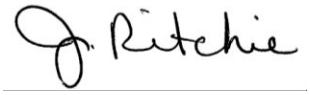
Samples collected were submitted to Merit Laboratories, Inc., East Lansing, Michigan for chemical analysis under chain of custody procedures and within applicable holding times. Refer to the laboratory analytical reports in Appendix D.

5.0 IDENTIFICATION OF BEA AUTHOR

This BEA was conducted on December 10, 2015, by Mr. Jamie Antoniewicz, P.E., Project Engineer, and reviewed by Ms. Jennifer L. Ritchie, C.P.G., Regional Site Investigation Manager, PM Environmental, Inc., which is prior to or within 45 days of becoming the property owner or operator. Qualification statements are provided as Appendix F.

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature and history of the subject property. We have developed and performed the all appropriate inquires in conformance with the standards and practices set forth in 40 CFR Part 312.

Jamie Antoniewicz, P.E.
Project Engineer



Jennifer L. Ritchie, C.P.G.
Regional Site Investigation Manager

6.0 AAI REPORT OR ASTM PHASE I ESA

As indicated in Section 1.3, PM completed a Phase I ESA dated November 30, 2015 in conformance with the scope and limitations of ASTM Practice E 1527-13 of the subject property located at 660 East 10 Mile Road, Ferndale/Pleasant Ridge, Oakland County, Michigan 48220/48069. The scope of the Phase I ESA included consideration of hazardous substances as defined in Section 20101(1)(y) of P.A 451 of 1994, as amended, and constituted the performance of an All Appropriate Inquiry in conformance with the standards and practices set forth in 40 CFR Part 312.

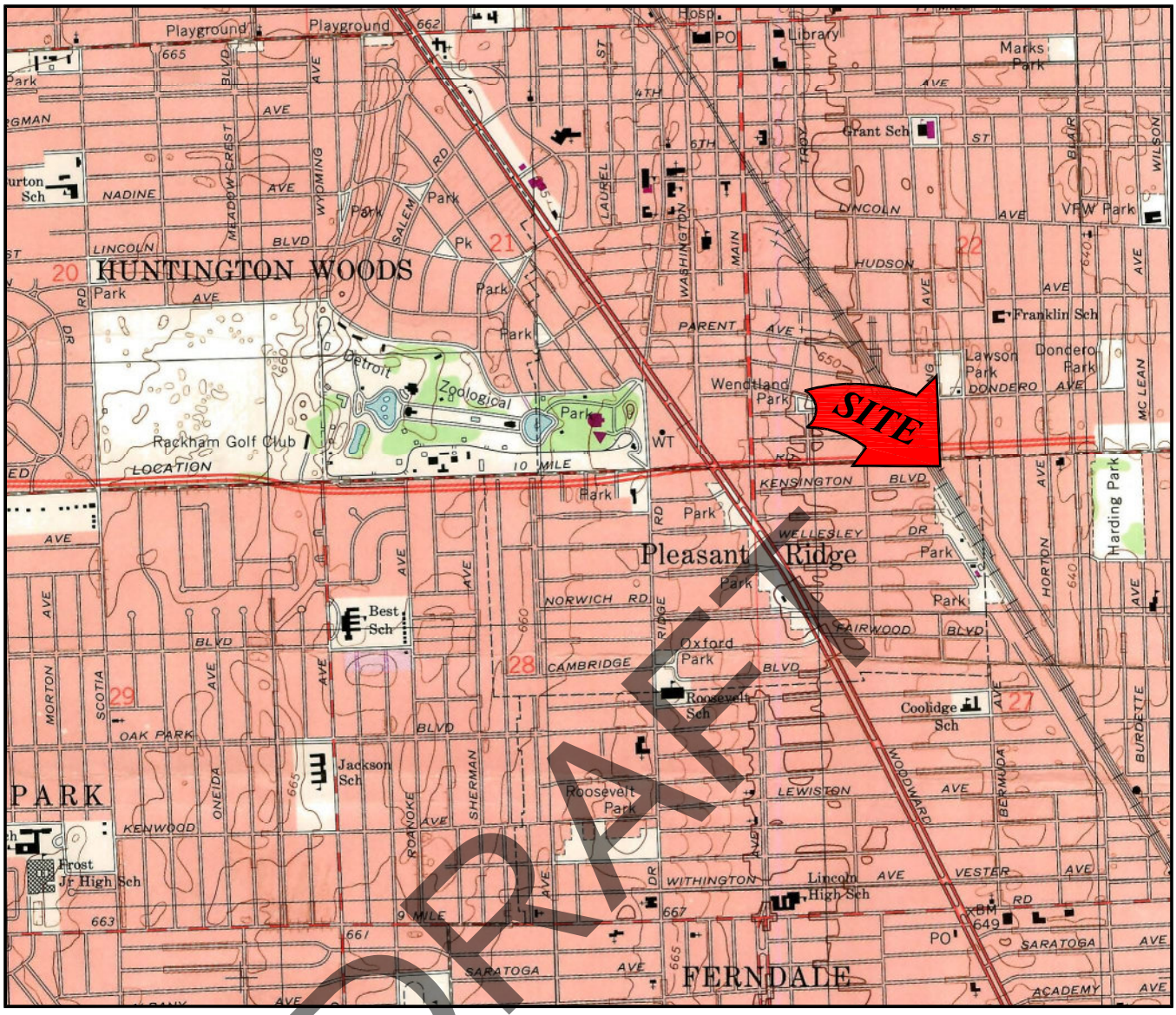
A copy of the November 2015 Phase I ESA is included in Appendix A.

7.0 REFERENCES

- Michigan Department of Environmental Quality (MDEQ) Generic Cleanup Criteria and Screening Levels as presented in Part 201 Rules 299.1 through 299.50, dated December 30, 2013 entitled “Cleanup Criteria Requirements for Response Activity”;
- MDEQ Operational Memorandum No. 4 “Site Characterization and Remediation Verification – Attachment 10, Peer Review Draft Groundwater Not in an Aquifer,” February 2007;
- MDEQ Operational Memorandum No. 2 “Sampling and Analysis,” October 22, 2004, Revised July 5, 2007;
- MDEQ May 2013 Guidance Document for the Vapor Intrusion Pathway;
- Baseline Environmental Submittal Form (EQP 4025), September 2015;
- Phase I ESA, October 5, 1993, ASTI;
- Subsurface Investigation, April 20, 1995, ASTI;
- Phase I ESA, February 11, 2015, PM; and,
- Phase I ESA, November 30, 2015, PM.

Figures

PM ENVIRONMENTAL Environmental & Engineering Services



OAKLAND COUNTY

SCALE 1:24,000

1 MILE 1/2 MILE 0 1 MILE

FIGURE 1

PROPERTY VICINITY MAP

USGS, 7.5 MINUTE SERIES

ROYAL OAK, MI QUADRANGLE, 1996.

PM ENVIRONMENTAL | Environmental & Engineering Services

PROJ:
WALKER WIRE PROPERTY
660 EAST 10 MILE ROAD
FERNDALE, MI

THIS IS NOT A LEGAL SURVEY

VERIFY SCALE
0 2,000'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

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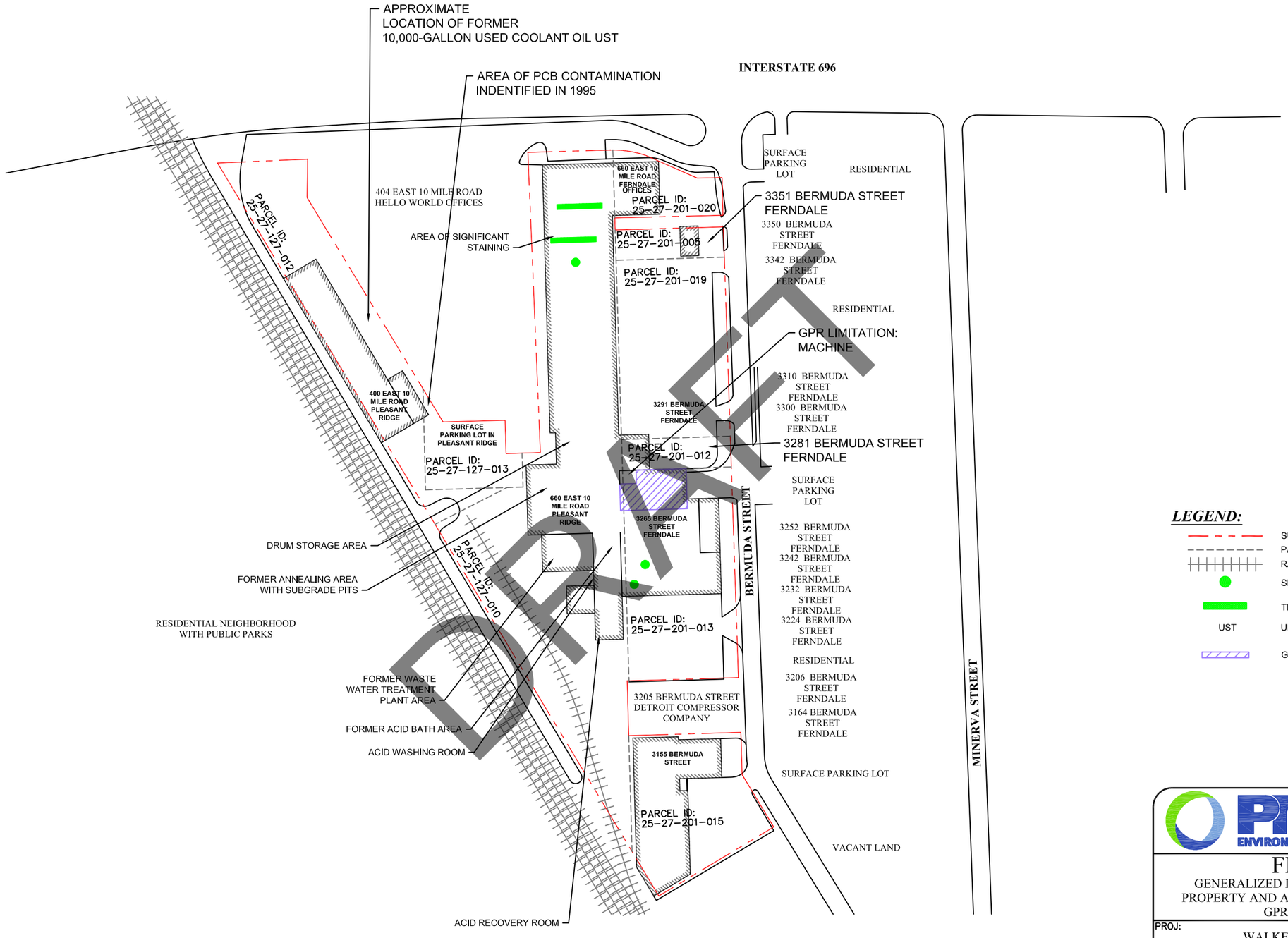
CHKD BY: BS	SCALE: 1" = 2,000'
FILE NAME: 02-7954-0F01R00	



PM ENVIRONMENTAL | Environmental & Engineering Services

FIGURE 2

GENERALIZED DIAGRAM OF THE SUBJECT PROPERTY AND ADJOINING PROPERTIES WITH GPR SURVEY AREA

PROJ:

WALKER WIRE PROPERTY
660 EAST 10 MILE ROAD
FERNDALE, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: ES/CS/KS	DATE: 8/7/2015
VERIFY SCALE 0 — 160' IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	CHKD BY: BS/JA	SCALE: 1" = 160'
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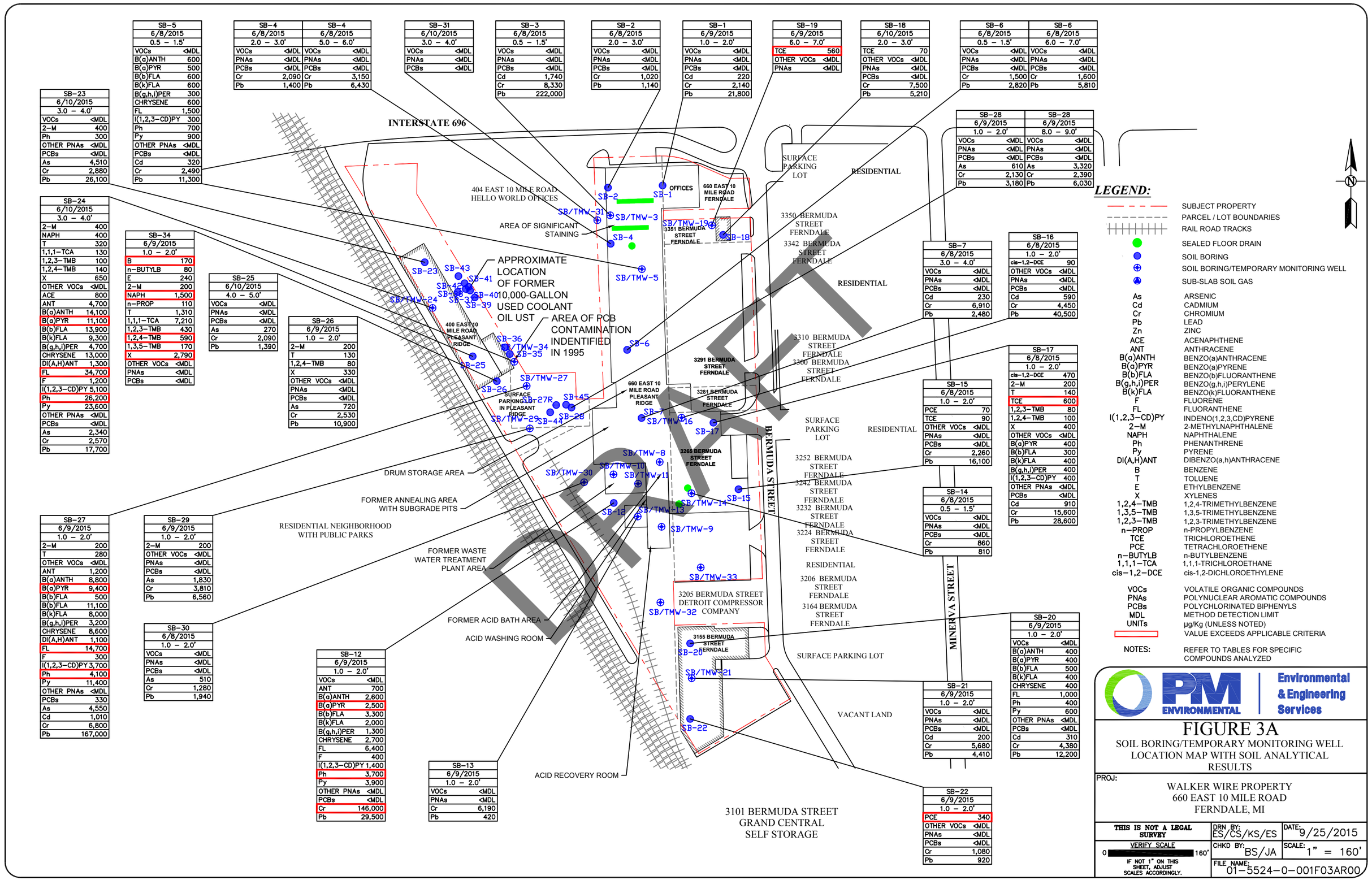


SB-23	
6/10/2015	
3.0 – 4.0'	
VOCs	<MDL
2-M	400
Ph	300
OTHER PNAs	<MDL
PCBs	<MDL
As	4,510
Cr	2,880
Pb	26,100

SB-24	
6/10/2015	
3.0 – 4.0'	
2-M	400
NAPH	400
T	320
1,1,1-TCA	130
1,2,3-TMB	100
1,2,4-TMB	140
X	650
OTHER VOCs	<MDL
ACE	800
ANT	4,700
B(a)ANTH	14,100
B(a)PYR	11,100
B(b)FLA	13,900
B(k)FLA	9,300
B(g,h,i)PER	4,700
CHRYSENE	13,000
DI(A,H)ANT	1,300
FL	34,700
F	1,200
I(1,2,3-CD)PY	5,100
Ph	26,200
Py	23,600
OTHER PNAs	<MDL
PCBs	<MDL
As	2,340
Cr	2,570
Pb	17,700

SB-27	
6/9/2015	
1.0 – 2.0'	
2-M	200
T	280
OTHER VOCs	<MDL
ANT	1,200
B(a)ANTH	8,800
B(a)PYR	9,400
B(b)FLA	500
B(b)FLA	11,100
B(k)FLA	8,000
B(g,h,i)PER	3,200
CHRYSENE	8,600
DI(A,H)ANT	1,100
FL	14,700
F	300
I(1,2,3-CD)PY	3,700
Ph	4,100
Py	11,400
OTHER PNAs	<MDL
PCBs	330
As	4,550
Cd	1,010
Cr	6,800
Pb	167,000

SB-5	
6/8/2015	
0.5 – 1.5'	
VOCs	<MDL
B(a)ANTH	600
B(a)PYR	500
B(b)FLA	600
B(k)FLA	600
B(g,h,i)PER	300
CHRYSENE	600
FL	1,500
I(1,2,3-CD)PY	300
Ph	700
Py	900
OTHER PNAs	<MDL
PCBs	<MDL
Cd	320
Cr	2,490
Pb	11,300

SB-34	
6/9/2015	
1.0 – 2.0'	
B	170
n-BUTYLB	80
E	240
2-M	200
NAPH	1,500
n-PROP	110
T	1,310
1,1,1-TCA	7,210
1,2,3-TMB	430
1,2,4-TMB	590
1,3,5-TMB	170
X	2,790
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	<MDL

SB-29	
6/9/2015	
1.0 – 2.0'	
2-M	200
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	1,830
Cr	3,810
Pb	6,560

SB-30	
6/8/2015	
1.0 – 2.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	510
Cr	1,280
Pb	1,940

SB-4	
6/8/2015	
2.0 – 3.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cr	2,090
Pb	1,400

SB-4	
6/8/2015	
5.0 – 6.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cr	3,150
Pb	6,430

SB-25	
6/10/2015	
4.0 – 5.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	270
Cr	2,090
Pb	1,390

SB-26	
6/9/2015	
1.0 – 2.0'	
2-M	200
T	130
1,2,4-TMB	80
X	330
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	720
Cr	2,530
Pb	10,900

SB-12	
6/9/2015	
1.0 – 2.0'	
VOCs	<MDL
ANT	700
B(a)ANTH	2,600
B(a)PYR	2,500
B(b)FLA	3,300
B(k)FLA	2,000
B(g,h,i)PER	1,300
CHRYSENE	2,700
FL	6,400
F	400
I(1,2,3-CD)PY	1,400
Ph	3,700
Py	3,900
OTHER PNAs	<MDL
PCBs	<MDL
Cr	146,000
Pb	29,500

SB-13	
6/9/2015	
1.0 – 2.0'	
VOCs	<MDL
PNAs	<MDL
Cr	6,190
Pb	420

SB-31	
6/10/2015	
3.0 – 4.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL

SB-3	
6/8/2015	
0.5 – 1.5'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cd	1,740
Cr	8,330
Pb	222,000

SB-2	
6/8/2015	
2.0 – 3.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cr	1,020
Pb	1,140

SB-1	
6/9/2015	
1.0 – 2.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cd	220
Cr	2,140
Pb	21,800

SB-19	
6/9/2015	
6.0 – 7.0'	
TCE	560
OTHER VOCs	<MDL
PNAs	<MDL

SB-18	
6/10/2015	
2.0 – 3.0'	
TCE	70
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cr	7,500
Pb	5,210

SB-6	
6/8/2015	
0.5 – 1.5'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cr	1,500
Pb	2,820

SB-6	
6/8/2015	
6.0 – 7.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cr	1,600
Pb	5,810

SB-28	
6/9/2015	
1.0 – 2.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	610
Cr	2,130
Pb	3,180

SB-28	
6/9/2015	
8.0 – 9.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	3,320
Cr	2,390
Pb	6,030

SB-7	
6/8/2015	
3.0 – 4.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cd	230
Cr	6,910
Pb	2,480

SB-16	
6/8/2015	
1.0 – 2.0'	
cis-1,2-DCE	90
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cd	590
Cr	4,450
Pb	40,500

SB-15	
6/8/2015	
1.0 – 2.0'	
PCE	70
TCE	90
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cr	2,260
Pb	16,100

SB-14	
6/8/2015	
0.5 – 1.5'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cr	860
Pb	810

SB-17	
6/8/2015	
1.0 – 2.0'	
cis-1,2-DCE	470
2-M	200
T	140
TCE	600
1,2,3-TMB	80
1,2,4-TMB	100
X	400
OTHER VOCs	<MDL
B(a)PYR	400
B(b)FLA	300
B(k)FLA	400
B(g,h,i)PER	400
I(1,2,3-CD)PY	400
OTHER PNAs	<MDL
PCBs	<MDL
Cd	910
Cr	15,600
Pb	28,600

SB-20	
6/9/2015	
1.0 – 2.0'	
VOCs	<MDL
B(a)ANTH	400
B(a)PYR	400
B(b)FLA	500
B(k)FLA	400
CHRYSENE	400
FL	1,000
Ph	400
Py	600
OTHER PNAs	<MDL
PCBs	<MDL
Cd	310
Cr	4,380
Pb	12,200

SB-21	
6/9/2015	
1.0 – 2.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cd	200
Cr	5,680
Pb	4,410

SB-22	
6/9/2015	
1.0 – 2.0'	
PCE	340
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Cr	1,080
Pb	920

LEGEND:

	SUBJECT PROPERTY
	PARCEL / LOT BOUNDARIES
	RAIL ROAD TRACKS
	SEALED FLOOR DRAIN
	SOIL BORING
	SOIL BORING/TEMPORARY MONITORING WELL
	SUB-SLAB SOIL GAS
As	ARSENIC
Cd	CADMIUM
Cr	CHROMIUM
Pb	LEAD
Zn	ZINC
ACE	ACENAPHTHENE
ANT	ANTHRACENE
B(a)ANTH	BENZO(a)ANTHRACENE
B(a)PYR	BENZO(a)PYRENE
B(b)FLA	BENZO(b)FLUORANTHENE
B(g,h,i)PER	BENZO(g,h,i)PERYLENE
B(k)FLA	BENZO(k)FLUORANTHENE
F	FLUORENE
FL	FLUORANTHENE
I(1,2,3-CD)PY	INDENO(1,2,3,CD)PYRENE
2-M	2-METHYLNAPHTHALENE
NAPH	NAPHTHALENE
Ph	PHENANTHRENE
Py	PYRENE
DI(A,H)ANT	DIBENZO(a,h)ANTHRACENE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	XYLENES
1,2,4-TMB	1,2,4-TRIMETHYLBENZENE
1,3,5-TMB	1,3,5-TRIMETHYLBENZENE
1,2,3-TMB	1,2,3-TRIMETHYLBENZENE
n-PROP	n-PROPYLBENZENE
TCE	TRICHLOROETHENE
PCE	TETRACHLOROETHENE
n-BUTYLB	n-BUTYLBENZENE
1,1,1-TCA	1,1,1-TRICHLOROETHANE
cis-1,2-DCE	cis-1,2-DICHLOROETHYLENE
VOCs	VOLATILE ORGANIC COMPOUNDS
PNAs	POLYNUCLEAR AROMATIC COMPOUNDS
PCBs	POLYCHLORINATED BIPHENYLS
MDL	METHOD DETECTION LIMIT
UNITs	µg/Kg (UNLESS NOTED)
	VALUE EXCEEDS APPLICABLE CRITERIA

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

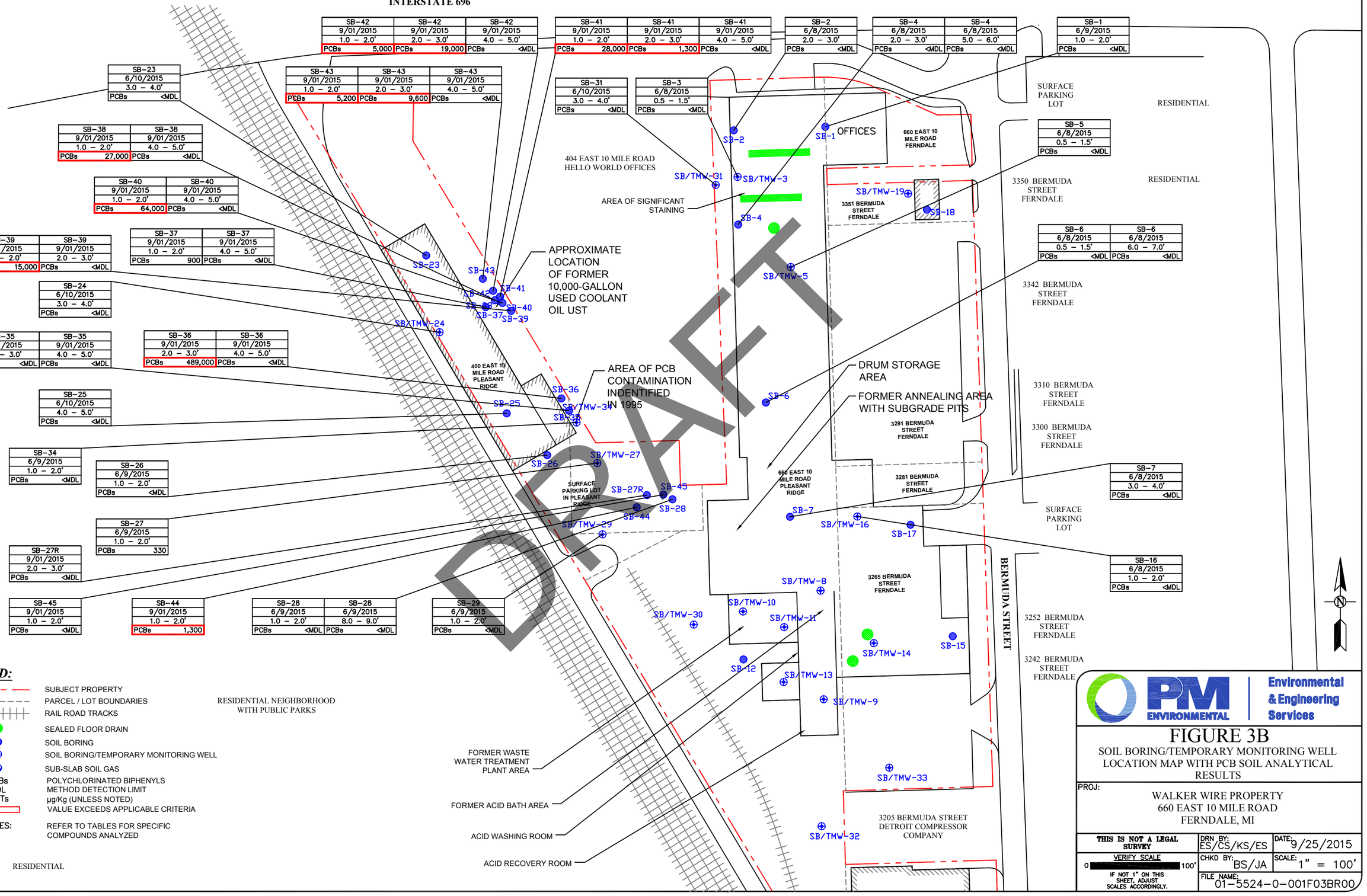
PM ENVIRONMENTAL | Environmental & Engineering Services

FIGURE 3A

SOIL BORING/TEMPORARY MONITORING WELL LOCATION MAP WITH SOIL ANALYTICAL RESULTS

PROJ:
WALKER WIRE PROPERTY
660 EAST 10 MILE ROAD
FERNDALE, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: ES/CS/KS/ES	DATE: 9/25/2015
VERIFY SCALE 0 — 160' IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	CHKD BY: BS/JA	SCALE: 1" = 160'
	FILE NAME: 01-5524-0-001F03AR00	


INTERSTATE 696
SB-42 9/01/2015 1.0 – 2.0' PCBs 5,000
SB-42 9/01/2015 2.0 – 3.0' PCBs 19,000
SB-42 9/01/2015 4.0 – 5.0' PCBs <MDL
SB-41 9/01/2015 1.0 – 2.0' PCBs 28,000
SB-41 9/01/2015 2.0 – 3.0' PCBs 1,300
SB-41 9/01/2015 4.0 – 5.0' PCBs <MDL
SB-2 6/8/2015 2.0 – 3.0' PCBs <MDL
SB-4 6/8/2015 2.0 – 3.0' PCBs <MDL
SB-4 6/8/2015 5.0 – 6.0' PCBs <MDL
SB-1 6/9/2015 1.0 – 2.0' PCBs <MDL
SB-23 6/10/2015 3.0 – 4.0' PCBs <MDL
SB-43 9/01/2015 1.0 – 2.0' PCBs 5,200
SB-43 9/01/2015 2.0 – 3.0' PCBs 9,600
SB-43 9/01/2015 4.0 – 5.0' PCBs <MDL
SB-31 6/10/2015 3.0 – 4.0' PCBs <MDL
SB-3 6/8/2015 0.5 – 1.5' PCBs <MDL
SB-38 9/01/2015 1.0 – 2.0' PCBs 27,000
SB-38 9/01/2015 4.0 – 5.0' PCBs <MDL
SB-40 9/01/2015 1.0 – 2.0' PCBs 64,000
SB-40 9/01/2015 4.0 – 5.0' PCBs <MDL
SB-39 9/01/2015 1.0 – 2.0' PCBs 15,000
SB-39 9/01/2015 2.0 – 3.0' PCBs <MDL
SB-37 9/01/2015 1.0 – 2.0' PCBs 900
SB-37 9/01/2015 4.0 – 5.0' PCBs <MDL
SB-24 6/10/2015 3.0 – 4.0' PCBs <MDL
SB-35 9/01/2015 2.0 – 3.0' PCBs <MDL
SB-35 9/01/2015 4.0 – 5.0' PCBs <MDL
SB-36 9/01/2015 2.0 – 3.0' PCBs 489,000
SB-36 9/01/2015 4.0 – 5.0' PCBs <MDL
SB-25 6/10/2015 4.0 – 5.0' PCBs <MDL
SB-34 6/9/2015 1.0 – 2.0' PCBs <MDL
SB-26 6/9/2015 1.0 – 2.0' PCBs <MDL
SB-27 6/9/2015 1.0 – 2.0' PCBs 330
SB-27R 9/01/2015 2.0 – 3.0' PCBs <MDL
SB-45 9/01/2015 1.0 – 2.0' PCBs <MDL
SB-44 9/01/2015 1.0 – 2.0' PCBs 1,300
SB-28 6/9/2015 1.0 – 2.0' PCBs <MDL
SB-28 6/9/2015 8.0 – 9.0' PCBs <MDL
SB-29 6/9/2015 1.0 – 2.0' PCBs <MDL
SB-5 6/8/2015 0.5 – 1.5' PCBs <MDL
SB-6 6/8/2015 0.5 – 1.5' PCBs <MDL
SB-6 6/8/2015 6.0 – 7.0' PCBs <MDL
SB-7 6/8/2015 3.0 – 4.0' PCBs <MDL
SB-16 6/8/2015 1.0 – 2.0' PCBs <MDL
SURFACE PARKING LOT
RESIDENTIAL
OFFICES
660 EAST 10 MILE ROAD FERNDALE
404 EAST 10 MILE ROAD HELLO WORLD OFFICES
AREA OF SIGNIFICANT STAINING
3350 BERMUDA STREET FERNDALE
3351 BERMUDA STREET FERNDALE
3342 BERMUDA STREET FERNDALE
APPROXIMATE LOCATION OF FORMER 10,000-GALLON USED COOLANT OIL UST
400 EAST 10 MILE ROAD PLEASANT RIDGE
AREA OF PCB CONTAMINATION INDENTIFIED IN 1995
DRUM STORAGE AREA
FORMER ANNEALING AREA WITH SUBGRADE PITS
3310 BERMUDA STREET FERNDALE
3291 BERMUDA STREET FERNDALE
3300 BERMUDA STREET FERNDALE
650 EAST 10 MILE ROAD PLEASANT RIDGE
3281 BERMUDA STREET FERNDALE
SURFACE PARKING LOT IN PLEASANT RIDGE
SURFACE PARKING LOT
3265 BERMUDA STREET FERNDALE
BERMUDA STREET
3252 BERMUDA STREET FERNDALE
3242 BERMUDA STREET FERNDALE
3205 BERMUDA STREET DETROIT COMPRESSOR COMPANY
FORMER WASTE WATER TREATMENT PLANT AREA
FORMER ACID BATH AREA
ACID WASHING ROOM
ACID RECOVERY ROOM
RESIDENTIAL NEIGHBORHOOD WITH PUBLIC PARKS
RESIDENTIAL
SB-1 SB-2 SB-3 SB-4 SB-5 SB-6 SB-7 SB-8 SB-9 SB-10 SB-11 SB-12 SB-13 SB-14 SB-15 SB-16 SB-17 SB-18 SB-23 SB-24 SB-25 SB-26 SB-27 SB-27R SB-28 SB-29 SB-31 SB-32 SB-33 SB-34 SB-35 SB-36 SB-37 SB-38 SB-39 SB-40 SB-41 SB-42 SB-43 SB-44 SB-45
SB/TMW-3 SB/TMW-5 SB/TMW-8 SB/TMW-9 SB/TMW-10 SB/TMW-11 SB/TMW-13 SB/TMW-14 SB/TMW-16 SB/TMW-19 SB/TMW-24 SB/TMW-27 SB/TMW-29 SB/TMW-30 SB/TMW-31 SB/TMW-32 SB/TMW-33 SB/TMW-34
DRAFT
LEGEND:
SUBJECT PROPERTY
PARCEL / LOT BOUNDARIES
RAIL ROAD TRACKS
SEALED FLOOR DRAIN
SOIL BORING
SOIL BORING/TEMPORARY MONITORING WELL
SUB-SLAB SOIL GAS
PCBs POLYCHLORINATED BIPHENYLS
MDL METHOD DETECTION LIMIT
UNITs µg/Kg (UNLESS NOTED)
VALUE EXCEEDS APPLICABLE CRITERIA
NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED
PM ENVIRONMENTAL
Environmental & Engineering Services
FIGURE 3B
SOIL BORING/TEMPORARY MONITORING WELL LOCATION MAP WITH PCB SOIL ANALYTICAL RESULTS
PROJ:
WALKER WIRE PROPERTY
660 EAST 10 MILE ROAD
FERNDALE, MI
THIS IS NOT A LEGAL SURVEY
DRN BY: ES/CS/KS/ES
DATE: 9/25/2015
VERIFY SCALE 0 100'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
CHKD BY: BS/JA
SCALE: 1" = 100'
FILE NAME: 01-5524-0-001F03BR00

TMW–5	
6/8/2015	
3.29 – 8.29'	SCREEN
VOCs	<MDL
PNAs	<MDL

TMW–31	
6/10/2015	
3.55 – 8.55'	SCREEN
VOCs	<MDL
PNAs	<MDL

TMW–3	
6/8/2015	
2.09 – 7.09'	SCREEN
E	1
X	6
OTHER VOCs	<MDL
PNAs	<MDL
Cr	7

TMW–19	
6/9/2015	
4.15 – 9.15'	SCREEN
TCE	2
OTHER VOCs	<MDL
PNAs	<MDL

TMW–10	
6/9/2015	
4.15 – 9.15'	SCREEN
VOCs	<MDL
PNAs	<MDL
Cd	1.0
Cr	10
Zn	72

TMW–16	
6/8/2015	
3.05 – 8.05'	SCREEN
cis–1,2–DCE	191
trans–1,2–DCE	14
VINYL CHLORIDE	396
OTHER VOCs	<MDL
PNAs	<MDL
Cr	10

TMW–24	
6/10/2015	
8.06 – 13.06'	SCREEN
VOCs	<MDL
PNAs	<MDL

TMW–34	
6/9/2015	
4.46 – 9.46'	SCREEN
1,1,1–TCA	27
OTHER VOCs	<MDL
PNAs	<MDL

TMW–27	
6/9/2015	
5.00 – 10.00'	SCREEN
1,1,1–TCA	6
OTHER VOCs	<MDL
PNAs	<MDL
As	3
Cr	6

TMW–29	
6/9/2015	
5.00 – 10.00'	SCREEN
VOCs	<MDL
PNAs	<MDL
As	6
Cd	0.6
Cr	10

TMW–30	
6/8/2015	
2.86 – 7.86'	SCREEN
1,1–DCA	5
1,1,1–TCA	5
OTHER VOCs	<MDL
PNAs	<MDL

TMW–13	
6/9/2015	
2.84 – 7.84'	SCREEN
VOCs	<MDL
PNAs	<MDL
Cd	0.6
Zn	68

TMW–32	
6/9/2015	
3.96 – 8.96'	SCREEN
VOCs	<MDL
PNAs	<MDL

TMW–21	
6/9/2015	
3.55 – 8.55'	SCREEN
VOCs	<MDL
PNAs	<MDL

TMW–8	
6/9/2015	
4.45 – 9.45'	SCREEN
cis–1,2–DCE	3
TCE	4
OTHER VOCs	<MDL
PNAs	<MDL
Zn	7

TMW–11	
6/10/2015	
3.91 – 8.91'	SCREEN
BROMOD	2
Chl	9
OTHER VOCs	<MDL
PNAs	<MDL
Zn	55

TMW–14	
6/8/2015	
2.72 – 7.72'	SCREEN
TCE	5
OTHER VOCs	<MDL
PNAs	<MDL
Cr	5

TMW–9	
6/9/2015	
4.75 – 9.75'	SCREEN
VOCs	<MDL
PNAs	<MDL
Cd	1.2
Zn	259

TMW–33	
6/9/2015	
3.75 – 8.75'	SCREEN
VOCs	<MDL
PNAs	<MDL

INTERSTATE 696

AREA OF SIGNIFICANT STAINING

404 EAST 10 MILE ROAD HELLO WORLD OFFICES

APPROXIMATE LOCATION OF FORMER 10,000-GALLON USED COOLANT OIL UST

AREA OF PCB CONTAMINATION INDENTIFIED IN 1995

400 EAST 10 MILE ROAD PLEASANT RIDGE

SURFACE PARKING LOT IN PLEASANT RIDGE

660 EAST 10 MILE ROAD PLEASANT RIDGE

DRUM STORAGE AREA

FORMER ANNEALING AREA WITH SUBGRADE PITS

RESIDENTIAL NEIGHBORHOOD WITH PUBLIC PARKS

FORMER WASTE WATER TREATMENT PLANT AREA

FORMER ACID BATH AREA

ACID WASHING ROOM

ACID RECOVERY ROOM

OFFICES

660 EAST 10 MILE ROAD FERNDALE

3351 BERMUDA STREET FERNDALE

3342 BERMUDA STREET FERNDALE

3350 BERMUDA STREET FERNDALE

3291 BERMUDA STREET FERNDALE

3281 BERMUDA STREET FERNDALE

3310 BERMUDA STREET FERNDALE

3300 BERMUDA STREET FERNDALE

3265 BERMUDA STREET FERNDALE

3252 BERMUDA STREET FERNDALE

3242 BERMUDA STREET FERNDALE

3232 BERMUDA STREET FERNDALE

3224 BERMUDA STREET FERNDALE

3206 BERMUDA STREET FERNDALE

3205 BERMUDA STREET DETROIT COMPRESSOR COMPANY

3164 BERMUDA STREET FERNDALE

3155 BERMUDA STREET FERNDALE

3101 BERMUDA STREET GRAND CENTRAL SELF STORAGE

BERMUDA STREET

MINERVA STREET

SURFACE PARKING LOT

RESIDENTIAL

VACANT LAND

SB-1 SB-2 SB-3 SB-4 SB-5 SB-6 SB-7 SB-8 SB-9 SB-10 SB-11 SB-12 SB-13 SB-14 SB-15 SB-16 SB-17 SB-18 SB-20 SB-21 SB-22 SB-23 SB-24 SB-25 SB-26 SB-27 SB-28 SB-29 SB-30 SB-31 SB-32 SB-33 SB-34

SB/TMW-3 SB/TMW-5 SB/TMW-8 SB/TMW-9 SB/TMW-10 SB/TMW-11 SB/TMW-13 SB/TMW-14 SB/TMW-16 SB/TMW-19 SB/TMW-21 SB/TMW-24 SB/TMW-27 SB/TMW-29 SB/TMW-30 SB/TMW-31 SB/TMW-32 SB/TMW-33 SB/TMW-34

LEGEND:

- SUBJECT PROPERTY
- PARCEL / LOT BOUNDARIES
- RAIL ROAD TRACKS
- SEALED FLOOR DRAIN
- SOIL BORING
- SOIL BORING/TEMPORARY MONITORING WELL

As	ARSENIC
Cd	CADMIUM
Cr	CHROMIUM
Pb	LEAD
Zn	ZINC
E	ETHYLBENZENE
X	XYLENES
1,1–DCA	1,1-DICHLOROETHANE
trans–1,2–DCE	trans-1,2-DICHLOROETHYLENE
BROMOD	BROMODICHLOROMETHANE
TCE	TRICHLOROETHENE
1,1,1–TCA	1,1,1-TRICHLOROETHANE
cis–1,2–DCE	cis-1,2-DICHLOROETHYLENE
VOCs	VOLATILE ORGANIC COMPOUNDS
PNAs	POLYNUCLEAR AROMATIC COMPOUNDS
PCBs	POLYCHLORINATED BIPHENYLS
MDL	METHOD DETECTION LIMIT
UNITs	µg/L

VALUE EXCEEDS APPLICABLE CRITERIA

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

PM ENVIRONMENTAL — Environmental & Engineering Services

FIGURE 4

SOIL BORING/TEMPORARY MONITORING WELL LOCATION MAP WITH GROUNDWATER ANALYTICAL RESULTS

PROJ:

WALKER WIRE PROPERTY
660 EAST 10 MILE ROAD
FERNDALE, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: ES/KS	DATE: 8/7/2015
VERIFY SCALE 0 [redacted] 120' IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	CHKD BY: BS/JA	SCALE: 1" = 160'
	FILE NAME: 01–5524–0–001F04R01	

Tables

PM ENVIRONMENTAL Environmental & Engineering Services

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
660 EAST 10 MILE ROAD, FERNDALE, MICHIGAN
PM PROJECT #01-5524-0-001

VOLATILE ORGANIC COMPOUNDS (µg/Kg)			Benzene	n-Butylbenzene	cis-1,2-Dichloroethylene	Ethylbenzene	2-Methylnaphthalene	Naphthalene	n-Propylbenzene	Tetrachloroethylene	Toluene	1,1,1-Trichloroethane	Trichloroethylene	1,2,3-Trimethylbenzene*	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylenes	Other VOCs
Chemical Abstract Service Number (CAS#)			71432	104518	156592	100414	91576	91203	103651	127184	108883	71556	79016	526738	95636	108678	1330207	Various
Sample ID	**Sample Date**	**Sample Depth (feet bgs)**	**VOCs**															
SB-1	06/09/2015	1.0-2.0	<70	<70	<70	<70	<100	<400	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL
SB-2	06/08/2015	2.0-3.0	<70	<70	<70	<70	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL
SB-3	06/08/2015	0.5-1.5	<70	<70	<70	<70	<100	<400	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL
SB-4	06/08/2015	2.0-3.0	<60	<60	<60	<60	<100	<300	<60	<60	<60	<60	<60	<60	<60	<60	<160	<MDL
SB-4	06/08/2015	5.0-6.0	<70	<70	<70	<70	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL
SB-5	06/08/2015	0.5-1.5	<80	<80	<80	<80	<200	<400	<80	<80	<80	<80	<80	<80	<80	<80	<280	<MDL
SB-6	06/08/2015	0.5-1.5	<60	<60	<60	<60	<100	<300	<60	<60	<60	<60	<60	<60	<60	<60	<160	<MDL
SB-6	06/08/2015	6.0-7.0	<80	<80	<80	<80	<200	<400	<80	<80	<80	<80	<80	<80	<80	<80	<280	<MDL
SB-7	06/08/2015	3.0-4.0	<90	<90	<90	<90	<200	<400	<90	<90	<90	<90	<90	<90	<90	<90	<290	<MDL
SB-12	06/09/2015	1.0-2.0	<70	<70	<70	<70	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL
SB-13	06/09/2015	1.0-2.0	<60	<60	<60	<60	<100	<300	<60	<60	<60	<60	<60	<60	<60	<60	<160	<MDL
SB-14	06/08/2015	0.5-1.5	<60	<60	<60	<60	<100	<300	<60	<60	<60	<60	<60	<60	<60	<60	<160	<MDL
SB-15	06/08/2015	1.0-2.0	<70	<70	<70	<70	<100	<400	<70	70	<70	<70	90	<70	<70	<70	<170	<MDL
SB-16	06/08/2015	1.0-2.0	<70	<70	90	<70	<100	<400	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL
SB-17	06/08/2015	1.0-2.0	<70	<70	470	<70	200	<400	<70	<70	140	<70	**600**	80	100	<70	400	<MDL
SB-18	06/10/2015	2.0-3.0	<70	<70	<70	<70	<100	<300	<70	<70	<70	<70	70	<70	<70	<70	<170	<MDL
SB-19	06/09/2015	6.0-7.0	<80	<80	<80	<80	<200	<400	<80	<80	<80	<80	**560**	<80	<80	<80	<280	<MDL
SB-20	06/09/2015	1.0-2.0	<70	<70	<70	<70	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL
SB-22	06/09/2015	1.0-2.0	<70	<70	<70	<70	<100	<400	<70	**340**	<70	<70	<70	<70	<70	<70	<170	<MDL
SB-21	06/09/2015	1.0-2.0	<80	<80	<80	<80	<200	<400	<80	<80	<80	<80	<80	<80	<80	<80	<280	<MDL
SB-23	06/10/2015	3.0-4.0	<70	<70	<70	<70	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL
SB-24	06/10/2015	3.0-4.0	<60	<60	<60	<60	400	400	<60	<60	320	130	<60	100	140	<60	650	<MDL
SB-25	06/10/2015	4.0-5.0	<60	<60	<60	<60	<100	<300	<60	<60	<60	<60	<60	<60	<60	<60	<160	<MDL
SB-26	06/09/2015	1.0-2.0	<60	<60	<60	<60	200	<300	<60	<60	130	<60	<60	<60	80	<60	330	<MDL
SB-27	06/09/2015	1.0-2.0	<80	<80	<80	<80	200	<400	<80	<80	280	<80	<80	<80	<80	<80	<280	<MDL
SB-28	06/09/2015	1.0-2.0	<60	<60	<60	<60	<100	<300	<60	<60	<60	<60	<60	<60	<60	<60	<160	<MDL
SB-28	06/09/2015	8.0-9.0	<70	<70	<70	<70	<100	<400	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL
SB-29	06/09/2015	1.0-2.0	<60	<60	<60	<60	200	<300	<60	<60	<60	<60	<60	<60	<60	<60	<160	<MDL
SB-30	06/08/2015	1.0-2.0	<70	<70	<70	<70	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL
SB-31	06/10/2015	3.0-4.0	<70	<70	<70	<70	<100	<300	<70	<70	<70	<70	<70	<70	<70	<70	<170	<MDL
SB-34	06/09/2015	1.0-2.0	**170**	80	<70	240	1,700	**1,500**	110	<70	1,310	7,210	<70	430	**590**	170	**2,790**	<MDL
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) **Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013** **MDEQ Guidance Document For The Vapor Intrusion Pathway, Policy and Procedure Number: 09-017, Appendix D Vapor Intrusion Screening Values, May 2013**																		
Residential (µg/Kg)																		
Statewide Default Background Levels			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Drinking Water Protection (Res DWP)			100	1,600	1,400	1,500	57,000	35,000	1,600	100	16,000	4,000	100	1,800	2,100	1,800	5,600	Various
Groundwater Surface Water Interface Protection (GSIP)			4,000 {X}	ID	12,000	360	4,200	730	ID	1,200 {X}	5,400	1,800	4,000 {X}	570	570	1,100	820	Various
Soil Volatilization to Indoor Air Inhalation (Res SVII)			1,600	ID	22,000	87,000	2.70E+06	2.50E+05	ID	11,000	3.3E+05 {C}	2.50E+05	1,000	2.6E+06 {C}	4.3E+06 {C}	2.6E+06 {C}	6.3E+06 {C}	Various
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)			13,000	ID	1.80E+05	7.20E+05	1.50E+06	3.00E+05	ID	1.70E+05	2.80E+06	3.80E+06	11,000	1.60E+07	2.10E+07	1.60E+07	4.60E+07	Various
Ambient Air Finite VSI for 5 Meter Source Thickness			34,000	ID	4.20E+05	1.00E+06	1.50E+06	3.00E+05	ID	4.80E+05	5.10E+06	1.20E+07	25,000	3.80E+08	5.00E+08	3.80E+08	6.10E+07	Various
Ambient Air Finite VSI for 2 Meter Source Thickness			79,000	ID	9.90E+05	2.20E+06	1.50E+06	3.00E+05	ID	1.1E+06	1.20E+07	2.80E+07	57,000	3.80E+08	5.00E+08	3.80E+08	1.30E+08	Various
Ambient Air Particulate Soil Inhalation (Res PSI)			3.80E+08	2.00E+09	2.30E+09	1.00E+10	6.70E+08	2.00E+08	1.30E+09	2.7E+09	2.70E+10	6.70E+10	1.30E+08	8.20E+10	8.20E+10	8.20E+10	2.90E+11	Various
Direct Contact (Res DC)			1.80E+05	2.50E+06	2.5E+06 {C}	2.2E+07 {C}	8.10E+06	1.60E+07	2.50E+06	2.0E+05 {C}	5.0E+07 {C}	5.0E+08 {C}	5.0E+5 {C,DD}	3.2E+07 {C}	3.2E+07 {C}	3.2E+07 {C}	4.1E+08 {C}	Various
Nonresidential (µg/Kg)																		
Drinking Water Protection (Nonres DWP)			100	4,600	1,400	1,500	1.70E+05	1.00E+05	4,600	100	16,000	4,000	100	1,800	2,100	1,800	5,600	Various
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)			8,400	ID	41,000	4.6E+05 {C}	4.90E+06	4.70E+05	ID	21,000	6.1E+05 {C}	4.60E+05	1,900	4.8E+06 {C}	8.0E+06 {C}	4.8E+06 {C}	1.2E+07 {C}	Various
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)			45,000	ID	2.10E+05	2.40E+06	1.80E+06	3.50E+05	ID	2.10E+05	3.30E+06	4.50E+06	14,000	1.90E+07	2.50E+07	1.90E+07	5.40E+07	Various
Ambient Air Finite VSI for 5 Meter Source Thickness			99,000	ID	4.30E+05	3.10E+06	1.80E+06	3.50E+05	ID	4.90E+05	3.60E+07	1.50E+07	25,000	4.60E+08	6.00E+08	4.60E+08	6.50E+07	Various
Ambient Air Finite VSI for 2 Meter Source Thickness			2.30E+05	ID	1.00E+06	6.50E+06	1.80E+06	3.50E+05	ID	1.1E+06	3.60E+07	3.10E+07	58,000	4.60E+08	6.00E+08	4.60E+08	1.30E+08	Various
Ambient Air Particulate Soil Inhalation (Nonres PSI)			4.70E+08	ID	1.00E+09	1.30E+10	2.90E+08	8.80E+07	5.90E+08	1.2E+09	1.20E+10	2.90E+10	5.90E+07	3.60E+10	3.60E+10	3.60E+10	1.30E+11	Various
Direct Contact (Nonres DC)			8.40E+05 {C}	8.00E+06	8.0E+06 {C}	7.1E+07 {C}	2.60E+07	5.20E+07	8.00E+06	9.3E+05 {C}	1.6E+08 {C}	1.0E+09 {C}	6.6E+05 {C,DD}	1.0E+08 {C}	1.0E+08 {C}	1.0E+08 {C}	1.0E+09 {C}	Various
Screening Levels (µg/Kg)																		
Soil Saturation Concentration Screening Levels (Csat)			4.00E+05	1.00E+07	6.40E+05	1.40E+05	NA	NA	1.00E+07	88,000	2.50E+05	4.60E+05	5.00E+05	94,000	1.10E+05	94,000	1.50E+05	Various

Applicable Criterion/RBSL Exceeded

BOLD Value Exceeds Applicable Criterion/RBSL
bgs Below Ground Surface (feet)
1 1,2,3-Trimethylbenzene RBSLs based on the more restrictive of 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.
MDL Laboiratory method detection limit (MDL)
NA Not Applicable
NL Not Listed
NLL Not Likely to Leach
NLV Not Likely to Volatilize
ID Insufficient Data

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS
POLYNUCLEAR AROMATIC COMPOUNDS
660 EAST 10 MILE ROAD, FERNDALE, MICHIGAN
PM PROJECT #01-5524-0-001

POLYNUCLEAR AROMATIC COMPOUNDS (µg/Kg)			Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	2-Methylnaphthalene	Phenanthrene	Pyrene
Chemical Abstract Service Number (CAS#)			83329	208968	120127	56553	50328	205992	207089	191242	218019	53703	206440	86737	193395	91203	91576	85018	129000
Sample ID	**Sample Date**	**Sample Depth (feet bgs)**	**PNAs**																
SB-1	06/09/2015	1.0-2.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-2	06/08/2015	2.0-3.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-3	06/08/2015	0.5-1.5	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-4	06/08/2015	2.0-3.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-4	06/08/2015	5.0-6.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-5	06/08/2015	0.5-1.5	<300	<300	<300	600	500	600	600	300	600	<300	1,500	<300	300	<300	<300	700	900
SB-6	06/08/2015	0.5-1.5	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-6	06/08/2015	6.0-7.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-7	06/08/2015	3.0-4.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-12	06/09/2015	1.0-2.0	<300	<300	700	2,600	**2,500**	3,300	2,000	1,300	2,700	<300	6,400	400	1,400	<300	<300	**3,700**	3,900
SB-13	06/09/2015	1.0-2.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-14	06/08/2015	0.5-1.5	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-15	06/08/2015	1.0-2.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-16	06/08/2015	1.0-2.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-17	06/08/2015	1.0-2.0	<300	<300	<300	<300	400	300	400	400	<300	<300	<300	<300	400	<300	<300	<300	<300
SB-18	06/10/2015	2.0-3.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-19	06/09/2015	6.0-7.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-20	06/09/2015	1.0-2.0	<300	<300	<300	400	400	500	400	<300	400	<300	1,000	<300	<300	<300	<300	400	600
SB-22	06/09/2015	1.0-2.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-21	06/09/2015	1.0-2.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-23	06/10/2015	3.0-4.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	400	300	<300
SB-24	06/10/2015	3.0-4.0	800	<500	4,700	14,100	**11,100**	13,900	9,300	4,700	13,000	1,300	**34,700**	1,200	5,100	<500	<500	**26,200**	23,600
SB-25	06/10/2015	4.0-5.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-26	06/09/2015	1.0-2.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-27	06/09/2015	1.0-2.0	<300	<300	1,200	8,800	**9,400**	11,100	8,000	3,200	8,600	1,100	**14,700**	300	3,700	<300	<300	**4,100**	11,400
SB-28	06/09/2015	1.0-2.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-28	06/09/2015	8.0-9.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-29	06/09/2015	1.0-2.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-30	06/08/2015	1.0-2.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-31	06/10/2015	3.0-4.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
SB-34	06/09/2015	1.0-2.0	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) **Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013** **MDEQ Guidance Document For The Vapor Intrusion Pathway, Policy and Procedure Number: 09-017, Appendix D Vapor Intrusion Screening Values, May 2013**																			
Residential (µg/Kg)																			
Statewide Default Background Levels			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Drinking Water Protection (Res DWP)			3.00E+05	5,900	41,000	NLL	NLL	NLL	NLL	NLL	NLL	NLL	7.30E+05	3.90E+05	NLL	35,000	57,000	56,000	4.80E+05
Groundwater Surface Water Interface Protection (GSIP)			8,700	ID	ID	NLL	NLL	NLL	NLL	NLL	NLL	NLL	5,500	5,300	NLL	730	4,200	2,100	ID
Soil Volatilization to Indoor Air Inhalation (Res SVII)			1.9E+08	1.60E+06	1.0E+9 {D}	NLV	NLV	ID	NLV	NLV	ID	NLV	1.0E+9 {D}	5.8E+08	NLV	2.50E+05	2.70E+06	2.8E+06	1.0E+9 {D}
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)			8.1E+07	2.2E+06	1.4E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	7.40E+08	1.3E+08	NLV	3.0E+05	1.50E+06	1.6E+05	6.5E+08
Ambient Air Finite VSI for 5 Meter Source Thickness			8.1E+07	2.2E+06	1.4E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	7.4E+08	1.3E+08	NLV	3.0E+05	1.50E+06	1.6E+05	6.5E+08
Ambient Air Finite VSI for 2 Meter Source Thickness			8.1E+07	2.2E+06	1.4E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	7.4E+08	1.3E+08	NLV	3.0E+05	1.50E+06	1.6E+05	6.5E+08
Ambient Air Particulate Soil Inhalation (Res PSI)			1.4E+10	2.3E+09	6.7E+10	ID	1.5E+06	ID	ID	8.0E+08	ID	ID	9.3E+09	9.3E+09	ID	2.0E+08	6.70E+08	6.7E+06	6.7E+09
Direct Contact (Res DC)			4.1E+07	1.6E+06	2.3E+08	20,000	2,000	20,000	2.00E+05	2.5E+06	2.0E+06	2,000	4.6E+07	2.7E+07	20,000	1.6E+07	8.10E+06	1.6E+06	2.9E+07
Nonresidential (µg/Kg)																			
Drinking Water Protection (Nonres DWP)			8.80E+05	17,000	41,000	NLL	NLL	NLL	NLL	NLL	NLL	NLL	7.30E+05	8.90E+05	NLL	1.00E+05	1.70E+05	1.60E+05	4.80E+05
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)			3.5E+08	3.0E+06	1.0E+9 {D}	NLV	NLV	ID	NLV	NLV	ID	NLV	1.0E+9 {D}	1.0E+9 {D}	NLV	4.70E+05	4.90E+06	5.1E+06	1.0E+9 {D}
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)			9.7E+07	2.7E+06	1.6E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	8.9E+08	1.5E+08	NLV	3.50E+05	1.80E+06	1.90E+05	7.8E+08
Ambient Air Finite VSI for 5 Meter Source Thickness			9.7E+07	2.7E+06	1.6E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	8.8E+08	1.5E+08	NLV	3.50E+05	1.80E+06	1.90E+05	7.8E+08
Ambient Air Finite VSI for 2 Meter Source Thickness			9.7E+07	2.7E+06	1.6E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	8.8E+08	1.5E+08	NLV	3.50E+05	1.80E+06	1.90E+05	7.8E+08
Ambient Air Particulate Soil Inhalation (Nonres PSI)			6.2E+09	1.0E+09	2.9E+10	ID	1.9E+06	ID	ID	3.5E+08	ID	ID	4.1E+09	4.1E+09	ID	8.8E+07	2.90E+08	2.9E+06	2.9E+09
Direct Contact (Nonres DC)			1.3E+08	5.2E+06	7.3E+08	80,000	8,000	80,000	8.00E+05	7.0E+06	8.0E+06	8,000	1.3E+08	8.7E+07	80,000	5.2E+07	2.60E+07	5.2E+06	8.4E+07
Screening Levels (µg/Kg)																			
Soil Saturation Concentration Screening Levels (Csat)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Applicable Criterion/RBSL Exceeded

BOLD Value Exceeds Applicable Criterion/RBSL
bgs Below Ground Surface (feet)
MDL Laboiratory method detection limit (MDL)
NA Not Applicable
NL Not Listed
NLL Not Likely to Leach
NLV Not Likely to Volatilize
ID Insufficient Data

TABLE 3
SUMMARY OF SOIL ANALYTICAL RESULTS
POLYCHLORINATED BIPHENYLS AND METALS
660 EAST 10 MILE ROAD, FERNDALE, MICHIGAN
PM PROJECT #01-5524-0-001

POLCHLORINATED BIPHNEYLS (PCBs) AND METALS (µg/Kg)			PCBs	Arsenic	Cadmium	Chromium	Lead	Zinc
Chemical Abstract Service Number (CAS#)			1336363	7440382	7440439	16065831	7439921	7440666
Sample ID	**Sample Date**	**Sample Depth (feet bgs)**	**PCBs**	**METALs**				
SB-1	06/09/2015	1.0-2.0	<330	NA	220	2,140	21,800	NA
SB-2	06/08/2015	2.0-3.0	<330	NA	<200	1,020	1,140	NA
SB-3	06/08/2015	0.5-1.5	<330	NA	1,740	8,330	222,000	NA
SB-4	06/08/2015	2.0-3.0	<330	NA	<200	2,090	1,400	NA
SB-4	06/08/2015	5.0-6.0	<330	NA	<200	3,150	6,430	NA
SB-5	06/08/2015	0.5-1.5	<330	NA	320	2,490	11,300	NA
SB-6	06/08/2015	0.5-1.5	<330	NA	<200	1,500	2,820	NA
SB-6	06/08/2015	6.0-7.0	<330	NA	<200	1,600	5,810	NA
SB-7	06/08/2015	3.0-4.0	<330	NA	230	6,910	2,480	NA
SB-12	06/09/2015	1.0-2.0	<330	NA	<200	**146,000**	29,500	NA
SB-13	06/09/2015	1.0-2.0	NA	NA	<200	6,190	420	2,070
SB-14	06/08/2015	0.5-1.5	<330	NA	<200	860	810	NA
SB-15	06/08/2015	1.0-2.0	<330	NA	<200	2,260	16,100	NA
SB-16	06/08/2015	1.0-2.0	<330	NA	590	4,450	40,500	NA
SB-17	06/08/2015	1.0-2.0	<330	NA	910	15,600	28,600	NA
SB-18	06/10/2015	2.0-3.0	<330	NA	<200	7,500	5,210	NA
SB-19	06/09/2015	6.0-7.0	NA	NA	NA	NA	NA	NA
SB-20	06/09/2015	1.0-2.0	<330	NA	310	4,380	12,200	NA
SB-21	06/09/2015	1.0-2.0	<330	NA	200	5,680	4,410	NA
SB-22	06/09/2015	1.0-2.0	<330	NA	<200	1,080	920	NA
SB-23	06/10/2015	3.0-4.0	<330	4,510	<200	2,880	26,100	43,500
SB-24	06/10/2015	3.0-4.0	<330	2,340	<200	2,570	17,700	22,400
SB-25	06/10/2015	4.0-5.0	<330	270	<200	2,090	1,390	3,100
SB-26	06/09/2015	1.0-2.0	<330	720	<200	2,530	10,900	NA
SB-27	06/09/2015	1.0-2.0	330	4,550	1,010	6,800	167,000	NA
SB-28	06/09/2015	1.0-2.0	<330	610	<200	2,130	3,180	NA
SB-28	06/09/2015	8.0-9.0	<330	3,320	<200	2,390	6,030	NA
SB-29	06/09/2015	1.0-2.0	<330	1,830	<200	3,810	6,560	NA
SB-30	06/08/2015	1.0-2.0	<330	510	<200	1,280	1,940	NA
SB-31	06/10/2015	3.0-4.0	<330	NA	NA	NA	NA	NA
SB-34	06/09/2015	1.0-2.0	<330	NA	NA	NA	NA	NA
SB-27R	09/01/2015	2.0-3.0	<330	NA	NA	NA	NA	NA
SB-35	09/01/2015	2.0-3.0	<330	NA	NA	NA	NA	NA
SB-35	09/01/2015	4.0-5.0	<330	NA	NA	NA	NA	NA
SB-36	09/01/2015	2.0-3.0	**489,000**	NA	NA	NA	NA	NA
SB-36	09/01/2015	4.0-5.0	<330	NA	NA	NA	NA	NA
SB-37	09/01/2015	1.0-2.0	900	NA	NA	NA	NA	NA
SB-37	09/01/2015	4.0-5.0	<330	NA	NA	NA	NA	NA
SB-38	09/01/2015	1.0-2.0	**27,000**	NA	NA	NA	NA	NA
SB-38	09/01/2015	4.0-5.0	<330	NA	NA	NA	NA	NA
SB-39	09/01/2015	1.0-2.0	**15,000**	NA	NA	NA	NA	NA
SB-39	09/01/2015	2.0-3.0	<330	NA	NA	NA	NA	NA
SB-40	09/01/2015	1.0-2.0	**64,000**	NA	NA	NA	NA	NA
SB-40	09/01/2015	4.0-5.0	<330	NA	NA	NA	NA	NA
SB-41	09/01/2015	1.0-2.0	**28,000**	NA	NA	NA	NA	NA
SB-41	09/01/2015	2.0-3.0	**1,300**	NA	NA	NA	NA	NA
SB-41	09/01/2015	4.0-5.0	<330	NA	NA	NA	NA	NA
SB-42	09/01/2015	1.0-2.0	**5,000**	NA	NA	NA	NA	NA
SB-42	09/01/2015	2.0-3.0	**19,000**	NA	NA	NA	NA	NA
SB-42	09/01/2015	4.0-5.0	<330	NA	NA	NA	NA	NA
SB-43	09/01/2015	1.0-2.0	**5,200**	NA	NA	NA	NA	NA
SB-43	09/01/2015	2.0-3.0	**9,600**	NA	NA	NA	NA	NA
SB-43	09/01/2015	4.0-5.0	<330	NA	NA	NA	NA	NA
SB-44	09/01/2015	1.0-2.0	**1,300**	NA	NA	NA	NA	NA
SB-45	09/01/2015	1.0-2.0	<330	NA	NA	NA	NA	NA
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) **Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013** **MDEQ Guidance Document For The Vapor Intrusion Pathway, Policy and Procedure Number: 09-017, Appendix D Vapor Intrusion Screening Values, May 2013**								
Residential (µg/Kg)								
Statewide Default Background Levels			NA	5,800	1,200	18,000	21,000	47,000
Drinking Water Protection (Res DWP)			NLL	4,600	6,000	30,000	7.00E+05	2.40E+06
Groundwater Surface Water Interface Protection (GSIP)			NLL	4,600	5,600 {G,X}	3,300	5.2E+06 {G,X}	2.7E+05 {G}
Soil Volatilization to Indoor Air Inhalation (Res SVII)			3.0E+06	NLV	NLV	NLV	NLV	NLV
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)			2.40E+05	NLV	NLV	NLV	NLV	NLV
Ambient Air Finite VSI for 5 Meter Source Thickness			7.9E+06	NLV	NLV	NLV	NLV	NLV
Ambient Air Finite VSI for 2 Meter Source Thickness			7.9E+06	NLV	NLV	NLV	NLV	NLV
Ambient Air Particulate Soil Inhalation (Res PSI)			5.2E+06	7.20E+05	1.70E+06	2.60E+05	1.00E+08	ID
Direct Contact (Res DC)			{T}	7,600	5.50E+05	2.50E+06	4.00E+05	1.70E+08
Nonresidential (µg/Kg)								
Drinking Water Protection (Nonres DWP)			NLL	4,600	6,000	30,000	7.00E+05	5.00E+06
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)			1.6E+07	NLV	NLV	NLV	NLV	NLV
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)			8.10E+05	NLV	NLV	NLV	NLV	NLV
Ambient Air Finite VSI for 5 Meter Source Thickness			2.8E+07	NLV	NLV	NLV	NLV	NLV
Ambient Air Finite VSI for 2 Meter Source Thickness			2.8E+07	NLV	NLV	NLV	NLV	NLV
Ambient Air Particulate Soil Inhalation (Nonres PSI)			6.5E+06	9.10E+05	2.20E+06	2.40E+05	4.40E+07	ID
Direct Contact (Nonres DC)			{T}	37,000	2.10E+06	9.20E+06	9.0E+5 (DD)	6.30E+08
Screening Levels (µg/Kg)								
Soil Saturation Concentration Screening Levels (Csat)			NA	NA	NA	NA	NA	NA

{G} Metal GSIP Criteria for Surface Water Not Protected for Drinking Water Use based on 269 mg/L CaCO3 Hardness: Station ID 500011, Red Run Drain, near Warren, MI.

{T} Refer to the Toxic Substance Control Act (TSCA), 40 CFR 761, Subparts D and G, as amended, to determine the applicability of TSCA cleanup standards. Alternatives to compliance with the standards listed below are possible under Subpart D. New Releases may be subject to the standards identified in Subpart G. Use Part 201 soil direct contact criteria in the table below where TSCA standards are not applicable.

LAND USE CATEGORY	TSCA, Subpart D	Part 201
Residential	1,000 µg/Kg, or	4,000 µg/Kg
Nonresidential	10,000 µg/Kg if capped	16,000 µg/Kg

	Applicable Criterion/RBSL Exceeded
BOLD	Value Exceeds Applicable Criterion/RBSL
bgs	Below Ground Surface (feet)
MDL	Laboiratory method detection limit (MDL)
NA	Not Applicable
NL	Not Listed
NLL	Not Likely to Leach
NLV	Not Likely to Volatilize
ID	Insufficient Data

TABLE 4
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS, POLYNUCLEAR AROMATIC COMPOUNDS, AND METALS
660 EAST 10 MILE ROAD, FERNDALE, MICHIGAN
PM PROJECT #01-5524-0-001

VOLATILE ORGANIC COMPOUNDS (µg/L)				Bromodichloromethane	Chloroform	1,1-Dichloroethane	cis-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	Ethylbenzene	1,1,1-Trichloroethane	Trichloroethylene	Vinyl chloride	Xylenes	Other VOCs	PNAs	Arsenic	Cadmium	Chromium	Lead	Zinc
Chemical Abstract Service Number (CAS#)				75274	67663	75343	156592	156605	100414	71556	79016	75014	1330207	Various	Various	7440382	7440439	16065831	7439921	7440666
Sample ID	**Sample Date**	**Screen Depth (feet bgs)**	**Depth to Groundwater (feet bgs)**	**VOCs**											**PNAs**	**METALS**				
TMW-3	06/08/2015	2.09-7.09	4.22	<1	<1	<1	<1	<1	1	<1	<1	<1	6	<MDL	<MDL	NA	<0.5	7	<3	NA
TMW-5	06/08/2015	3.29-8.29	5.07	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<MDL	<MDL	NA	<0.5	<5	<3	NA
TMW-8	06/09/2015	4.45-9.45	5.80	<1	<1	<1	3	<1	<1	<1	4	<1	<3	<MDL	<MDL	NA	<0.5	<5	<3	7
TMW-9	06/09/2015	4.75-9.75	5.00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<MDL	<MDL	NA	1.2	<5	<3	259
TMW-10	06/09/2015	4.15-9.15	4.75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<MDL	<MDL	NA	1.0	10	<3	72
TMW-11	06/10/2015	3.91-8.91	4.98	2	9	<1	<1	<1	<1	<1	<1	<1	<3	<MDL	<MDL	NA	<0.5	<5	<3	55
TMW-13	06/09/2015	2.84-7.84	3.52	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<MDL	<MDL	NA	0.6	<5	<3	68
TMW-14	06/08/2015	2.72-7.72	4.09	<1	<1	<1	<1	<1	<1	<1	5	<1	<3	<MDL	<MDL	NA	<0.5	5	<3	NA
TMW-16	06/08/2015	3.05-8.05	4.36	<5	<5	<5	**191**	14	<5	<5	<5	**396**	<15	<MDL	<MDL	NA	<0.5	10	<3	NA
TMW-19	06/09/2015	4.15-9.15	4.55	<1	<1	<1	<1	<1	<1	<1	2	<1	<3	<MDL	<MDL	NA	NA	NA	NA	NA
TMW-21	06/09/2015	3.55-8.55	5.40	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<MDL	<MDL	NA	<0.5	<5	<3	NA
TMW-24	06/10/2015	8.06-13.06	9.69	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<MDL	<MDL	<2	<0.5	<5	<3	<5
TMW-27	06/09/2015	5.0-10.0	6.55	<1	<1	<1	<1	<1	<1	6	<1	<1	<3	<MDL	<MDL	3	<0.5	6	<3	NA
TMW-29	06/09/2015	5.0-10.0	7.45	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<MDL	<MDL	6	0.6	10	<3	NA
TMW-30	06/08/2015	2.86-7.86	4.63	<1	<1	5	<1	<1	<1	5	<1	<1	<3	<MDL	<MDL	<2	<0.5	<5	<3	NA
TMW-31	06/10/2015	3.55-8.55	4.15	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<MDL	<MDL	NA	NA	NA	NA	NA
TMW-32	06/09/2015	3.96-8.96	5.20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<MDL	<MDL	NA	NA	NA	NA	NA
TMW-33	06/09/2015	3.75-8.75	5.10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<3	<MDL	<MDL	NA	NA	NA	NA	NA
TMW-34	06/09/2015	4.46-9.46	5.80	<1	<1	<1	<1	<1	<1	27	<1	<1	<3	<MDL	<MDL	NA	NA	NA	NA	NA
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) **Generic Groundwater Cleanup Criteria Table 1: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013** **MDEQ Guidance Document For The Vapor Intrusion Pathway, Policy and Procedure Number: 09-017, Appendix D Vapor Intrusion Screening Values, May 2013**																				
Residential/Nonresidential (µg/L)																				
Residential Drinking Water (Res DW)				80 {A,W}	80 {A,W}	880	70 {A}	100 {A}	74 {E}	200 {A}	5.0 {A}	2.0 {A}	280 {E}	Various	Various	10 {A}	5.0 {A}	100 {A}	4.0 {L}	2,400
Nonresidential Drinking Water (Nonres DW)				80 {A,W}	80 {A,W}	2,500	70 {A}	100 {A}	74 {E}	200 {A}	5.0 {A}	2.0 {A}	280 {E}	Various	Various	10 {A}	5.0 {A}	100 {A}	4.0 {L}	5,000 {E}
Groundwater Surface Water Interface (GSI)				ID	350	740	620	1,500 {X}	18	89	200 {X}	13 {X}	41	Various	Various	10	4.6 {G,X}	11	30 {G,X}	270 {G}
Residential Groundwater Volatilization to Indoor Air Inhalation (Res GVII) [2]				4,800	28,000	1.00E+06	93,000	85,000	1.10E+05	6.60E+05	2,200	1,100	1.9E+5 {S}	Various	Various	NLV	NLV	NLV	NLV	NLV
Nonresidential Groundwater Volatilization to Indoor Air Inhalation (Nonres GVII) [2]				37,000	1.80E+05	2.30E+06	2.10E+05	2.00E+05	1.7E+5 {S}	1.3E+6 {S}	4,900	13,000	1.9E+5 {S}	Various	Various	NLV	NLV	NLV	NLV	NLV
Screening Levels (µg/L)																				
Residential Groundwater Vapor Intrusion Screening Levels ($GW_{VI\text{-}res}$) [3]				80	140	4,300	83	360	700	17,000	9.8	2.8	10,000	Various	Various	NL	NL	NL	NL	NL
Nonresidential Groundwater Vapor Intrusion Screening Levels ($GW_{VI\text{-}nr}$)[3]				170	720	18,000	350	1,500	2600	71000	41	52	10,000	Various	Various	NL	NL	NL	NL	NL
Water Solubility				6.74E+06	7.92E+06	5.06E+06	3.50E+06	6.30E+06	1.69E+05	1.33E+06	1.10E+06	2.76E+06	1.86E+05	Various	Various	NA	NA	NA	NA	NA
Flammability and Explosivity Screening Level				ID	ID	3.80E+05	5.30E+05	2.30E+05	43,000	ID	ID	33,000	70,000	Various	Various	ID	ID	ID	ID	ID

Applicable Criteria/RBSL Exceeded

BOLD Value Exceeds Applicable Criteria

bgs Below Ground Surface (feet)

MDL Laboiratory method detection limit (MDL)

[2] Tier 1 GVII Criteria based on 3 meter (or greater) groundwater depth

[3] (2013 Vapor Intrusion Guidance) Screening Levels based on depth to groundwater less than 3.0 meters and not in contact with building foundation

NA Not Applicable

NL Not Listed

NLL Not Likely to Leach

NLV Not Likely to Volatilize

ID Insufficient Data

{G} Metal GSI Criteria for Surface Water Not Protected for Drinking Water Use based on 269 mg/L CaCO3 Hardness: Station ID 500011, Red Run Drain, near Warren, MI.

Figures

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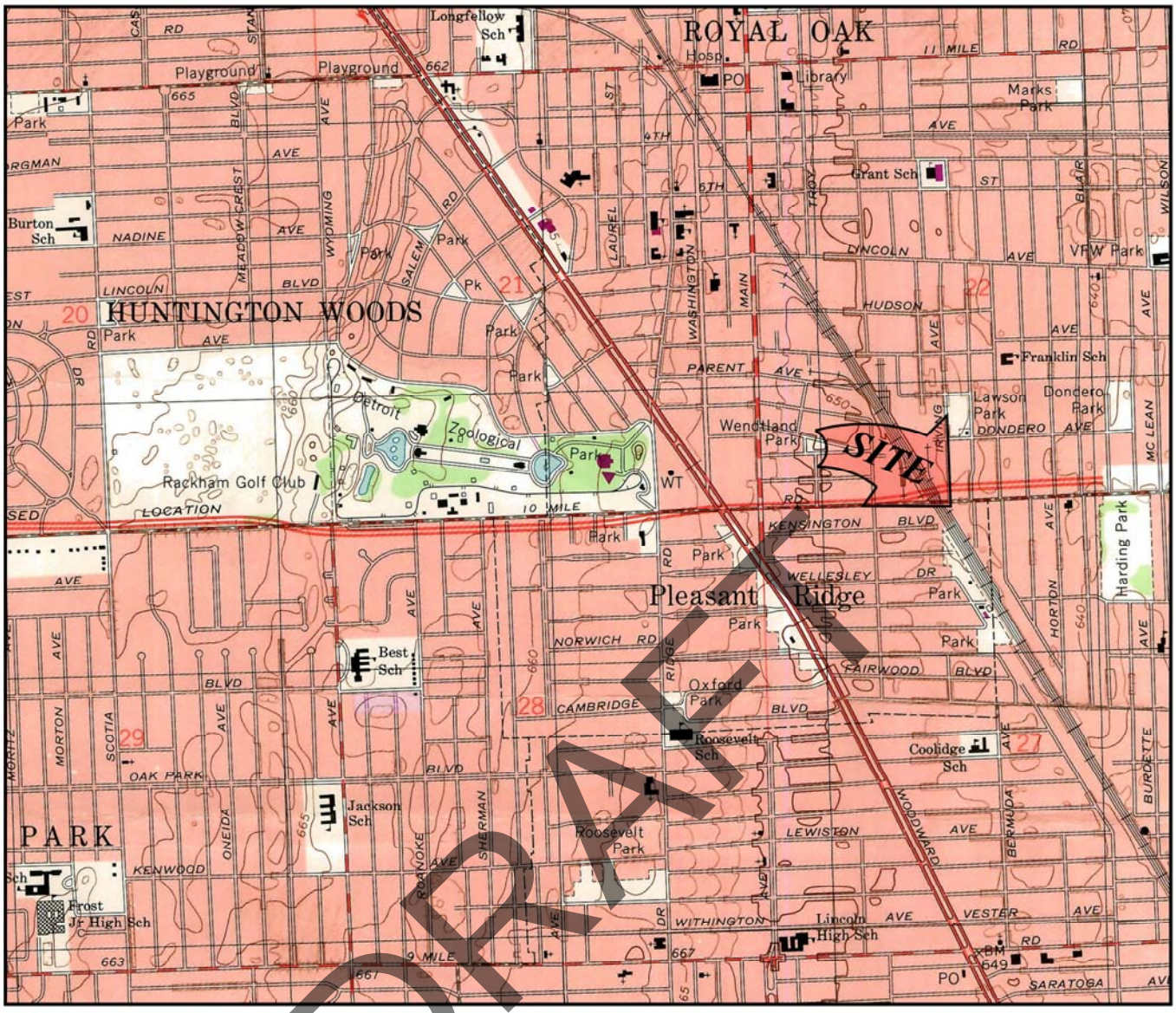


MICHIGAN QUADRANGLE LOCATION

OAKLAND COUNTY

SCALE 1:24,000

1 MILE 1/2 MILE 0 1 MILE

FIGURE 1

PROPERTY VICINITY MAP

USGS, 7.5 MINUTE SERIES

ROYAL OAK, MI QUADRANGLE, 1996.

PM ENVIRONMENTAL | Environmental & Engineering Services

PROJ:
MULTI-USE PROPERTY
404 EAST 10 MILE ROAD
PLEASANT RIDGE, MI

THIS IS NOT A LEGAL SURVEY

VERIFY SCALE
0 2,000'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRN BY: CS	DATE: 2/23/2016
CHKD BY: JA	SCALE: 1" = 2,000'
FILE NAME: 01-5706-0-001F01R00	

EAST 10 MILE ROAD (INTERSTATE 696 BEYOND)

660 EAST
10 MILE ROAD
FERNDALE - WALKER WIRE

APPROXIMATELY LOCATION OF
FORMER 1,000-GALLON HEPTANE UST
AND 1,000-GALLON ACETONE AST

EPRIZE DRIVE

400 EAST
10 MILE ROAD
PLEASANT
RIDGE - WALKER
WIRE STORAGE

BACK UP GENERATOR
WITH DIESEL AST

FORMER 10,000-GALLON
WASTE OIL AST
(NOT ON SUBJECT PROPERTY)

WALKER WIRE
PARKING/STORAGE

GAS
ASPHALT PAVED
GRASS
CONCRETE
FORMER MACHINE SHOP
FORMER MANUFACTURING OPERATIONS
1967–1974 ADDITION
FORMER MACHINE SHOP
1974–1980 ADDITION
FORMER COAL STORAGE AREA

LEGEND:

- SUBJECT PROPERTY
- FORMER/HISTORICAL SITE FEATURES
- RAIL ROAD TRACKS
- FLOOR DRAIN
- FORMER FLOOR DRAIN
- POLE MOUNTED TRANSFORMER
- BAYDOOR
- APPROXIMATE LIMITS OF BASEMENT
- (T) FORMER TOOL HOUSE (APPROXIMATE LOCATION)
- (C) FORMER COAL STORAGE AREA

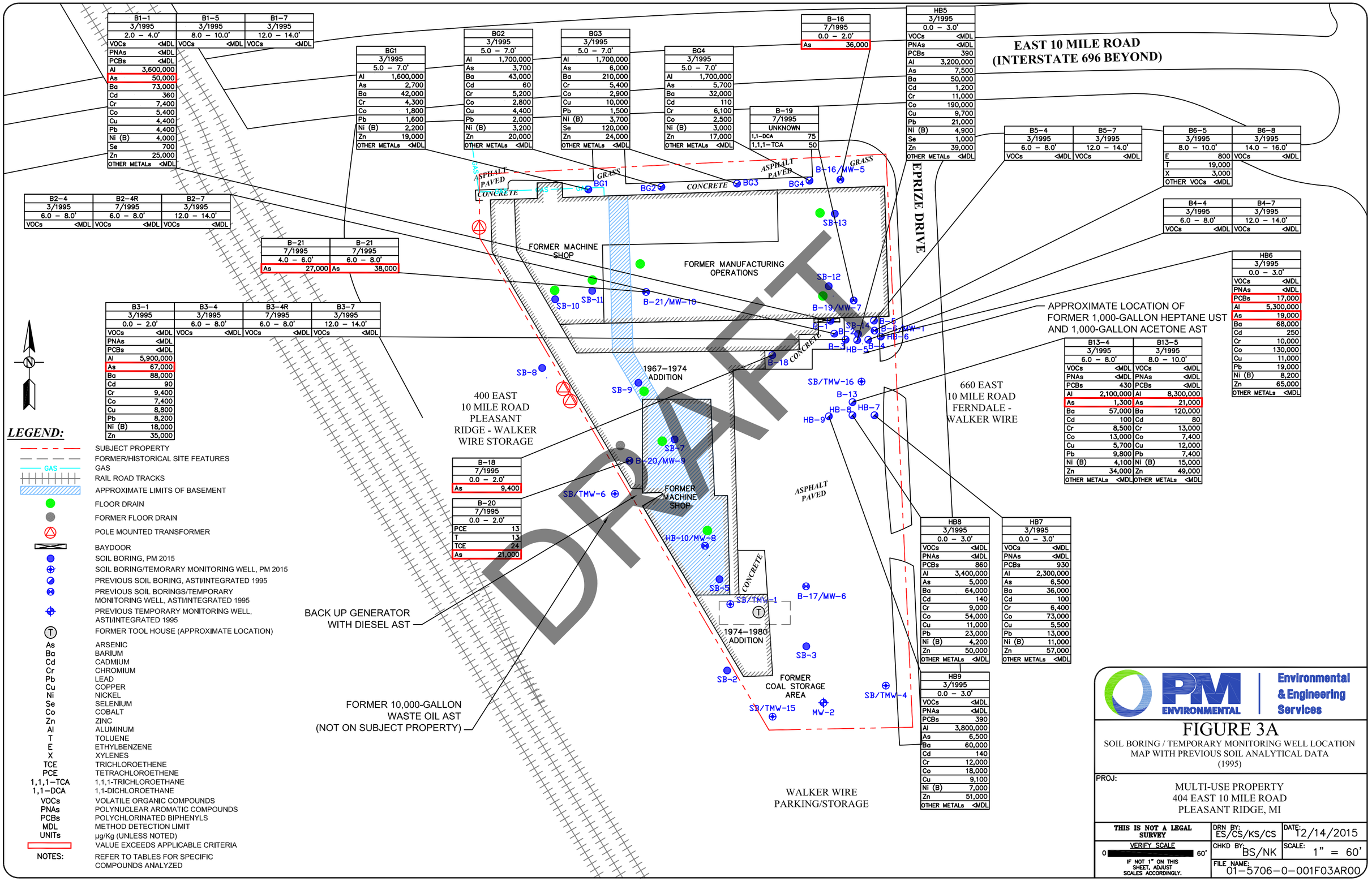
PM ENVIRONMENTAL | Environmental & Engineering Services

FIGURE 2

GENERALIZED DIAGRAM OF THE SUBJECT PROPERTY AND ADJOINING PROPERTIES

PROJ:
MULTI-USE PROPERTY
404 EAST 10 MILE ROAD
PLEASANT RIDGE, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: ES/CS	DATE: 12/14/2015
VERIFY SCALE 0 — 60' IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	CHKD BY: BS/NK	SCALE: 1" = 60'
	FILE NAME: 01-5706-0-001F02R00	



B1–1	
3/1995	
2.0 – 4.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Al	3,600,000
As	50,000
Ba	73,000
Cd	360
Cr	7,400
Co	5,400
Cu	4,400
Pb	4,400
Ni (B)	4,000
Se	700
Zn	25,000
OTHER METALs	<MDL

B1–5	
3/1995	
8.0 – 10.0'	
VOCs	<MDL

B1–7	
3/1995	
12.0 – 14.0'	
VOCs	<MDL

BG1	
3/1995	
5.0 – 7.0'	
Al	1,600,000
As	2,700
Ba	42,000
Cr	4,300
Co	1,800
Pb	1,600
Ni (B)	2,200
Zn	19,000
OTHER METALs	<MDL

BG2	
3/1995	
5.0 – 7.0'	
Al	1,700,000
As	3,700
Ba	43,000
Cd	60
Cr	5,200
Co	2,800
Cu	4,400
Pb	2,000
Ni (B)	3,200
Zn	20,000
OTHER METALs	<MDL

BG3	
3/1995	
5.0 – 7.0'	
Al	1,700,000
As	6,000
Ba	210,000
Cr	5,400
Co	2,900
Cu	10,000
Pb	1,500
Ni (B)	3,700
Se	120,000
Zn	24,000
OTHER METALs	<MDL

BG4	
3/1995	
5.0 – 7.0'	
Al	1,700,000
As	5,700
Ba	32,000
Cd	110
Cr	6,100
Co	2,500
Ni (B)	3,000
Zn	17,000
OTHER METALs	<MDL

B–16	
7/1995	
0.0 – 2.0'	
As	36,000

B–19	
7/1995	
UNKNOWN	
1,1–DCA	75
1,1,1–TCA	50

HB5	
3/1995	
0.0 – 3.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	390
Al	3,200,000
As	7,500
Ba	50,000
Cd	1,200
Cr	11,000
Co	190,000
Cu	9,700
Pb	21,000
Ni (B)	4,900
Se	1,000
Zn	39,000
OTHER METALs	<MDL

B5–4	
3/1995	
6.0 – 8.0'	
VOCs	<MDL

B5–7	
3/1995	
12.0 – 14.0'	
VOCs	<MDL

B6–5	
3/1995	
8.0 – 10.0'	
E	800
T	19,000
X	3,000
OTHER VOCs	<MDL

B6–8	
3/1995	
14.0 – 16.0'	
VOCs	<MDL

B4–4	
3/1995	
6.0 – 8.0'	
VOCs	<MDL

B4–7	
3/1995	
12.0 – 14.0'	
VOCs	<MDL

HB6	
3/1995	
0.0 – 3.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	17,000
Al	5,300,000
As	19,000
Ba	68,000
Cd	250
Cr	10,000
Co	130,000
Cu	11,000
Pb	19,000
Ni (B)	8,200
Zn	65,000
OTHER METALs	<MDL

B2–4	
3/1995	
6.0 – 8.0'	
VOCs	<MDL

B2–4R	
7/1995	
6.0 – 8.0'	
VOCs	<MDL

B2–7	
3/1995	
12.0 – 14.0'	
VOCs	<MDL

B–21	
7/1995	
4.0 – 6.0'	
As	27,000

B–21	
7/1995	
6.0 – 8.0'	
As	38,000

B3–1	
3/1995	
0.0 – 2.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Al	5,900,000
As	67,000
Ba	88,000
Cd	90
Cr	9,400
Co	7,400
Cu	8,800
Pb	8,200
Ni (B)	18,000
Zn	35,000

B3–4	
3/1995	
6.0 – 8.0'	
VOCs	<MDL

B3–4R	
7/1995	
6.0 – 8.0'	
VOCs	<MDL

B3–7	
3/1995	
12.0 – 14.0'	
VOCs	<MDL

B–18	
7/1995	
0.0 – 2.0'	
As	9,400

B–20	
7/1995	
0.0 – 2.0'	
PCE	13
T	13
TCE	24
As	21,000

B13–4	
3/1995	
6.0 – 8.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	430
Al	2,100,000
As	1,300
Ba	57,000
Cd	100
Cr	8,500
Co	13,000
Cu	5,700
Pb	9,800
Ni (B)	4,100
Zn	34,000
OTHER METALs	<MDL

B13–5	
3/1995	
8.0 – 10.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
Al	8,300,000
As	21,000
Ba	120,000
Cd	80
Cr	13,000
Co	7,400
Cu	12,000
Pb	7,400
Ni (B)	15,000
Zn	49,000
OTHER METALs	<MDL

HB8	
3/1995	
0.0 – 3.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	860
Al	3,400,000
As	5,000
Ba	64,000
Cd	140
Cr	9,000
Co	54,000
Cu	11,000
Pb	23,000
Ni (B)	4,200
Zn	50,000
OTHER METALs	<MDL

HB7	
3/1995	
0.0 – 3.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	930
Al	2,300,000
As	6,500
Ba	36,000
Cd	100
Cr	6,400
Co	73,000
Cu	5,500
Pb	13,000
Ni (B)	11,000
Zn	57,000
OTHER METALs	<MDL

HB9	
3/1995	
0.0 – 3.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	390
Al	3,800,000
As	6,500
Ba	60,000
Cd	140
Cr	12,000
Co	18,000
Cu	9,100
Ni (B)	7,000
Zn	51,000
OTHER METALs	<MDL

LEGEND:

- SUBJECT PROPERTY
- FORMER/HISTORICAL SITE FEATURES
- GAS
- RAIL ROAD TRACKS
- APPROXIMATE LIMITS OF BASEMENT
- FLOOR DRAIN
- FORMER FLOOR DRAIN
- POLE MOUNTED TRANSFORMER
- BAYDOOR
- SOIL BORING, PM 2015
- SOIL BORING/TEMORARY MONITORING WELL, PM 2015
- PREVIOUS SOIL BORING, ASTI/INTEGRATED 1995
- PREVIOUS SOIL BORINGS/TEMPORARY MONITORING WELL, ASTI/INTEGRATED 1995
- PREVIOUS TEMPORARY MONITORING WELL, ASTI/INTEGRATED 1995
- FORMER TOOL HOUSE (APPROXIMATE LOCATION)

As	ARSENIC
Ba	BARIUM
Cd	CADMIUM
Cr	CHROMIUM
Pb	LEAD
Cu	COPPER
Ni	NICKEL
Se	SELENIUM
Co	COBALT
Zn	ZINC
Al	ALUMINUM
T	TOLUENE
E	ETHYLBENZENE
X	XYLENES
TCE	TRICHLOROETHENE
PCE	TETRACHLOROETHENE
1,1,1–TCA	1,1,1-TRICHLOROETHANE
1,1–DCA	1,1-DICHLOROETHANE
VOCs	VOLATILE ORGANIC COMPOUNDS
PNAs	POLYNUCLEAR AROMATIC COMPOUNDS
PCBs	POLYCHLORINATED BIPHENYLS
MDL	METHOD DETECTION LIMIT
UNITs	µg/Kg (UNLESS NOTED)
	VALUE EXCEEDS APPLICABLE CRITERIA

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

PM ENVIRONMENTAL — Environmental & Engineering Services

FIGURE 3A

SOIL BORING / TEMPORARY MONITORING WELL LOCATION MAP WITH PREVIOUS SOIL ANALYTICAL DATA (1995)

PROJ:

MULTI-USE PROPERTY
404 EAST 10 MILE ROAD
PLEASANT RIDGE, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: ES/CS/KS/CS	DATE: 12/14/2015
VERIFY SCALE 0 — 60' IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	CHKD BY: BS/NK	SCALE: 1" = 60'
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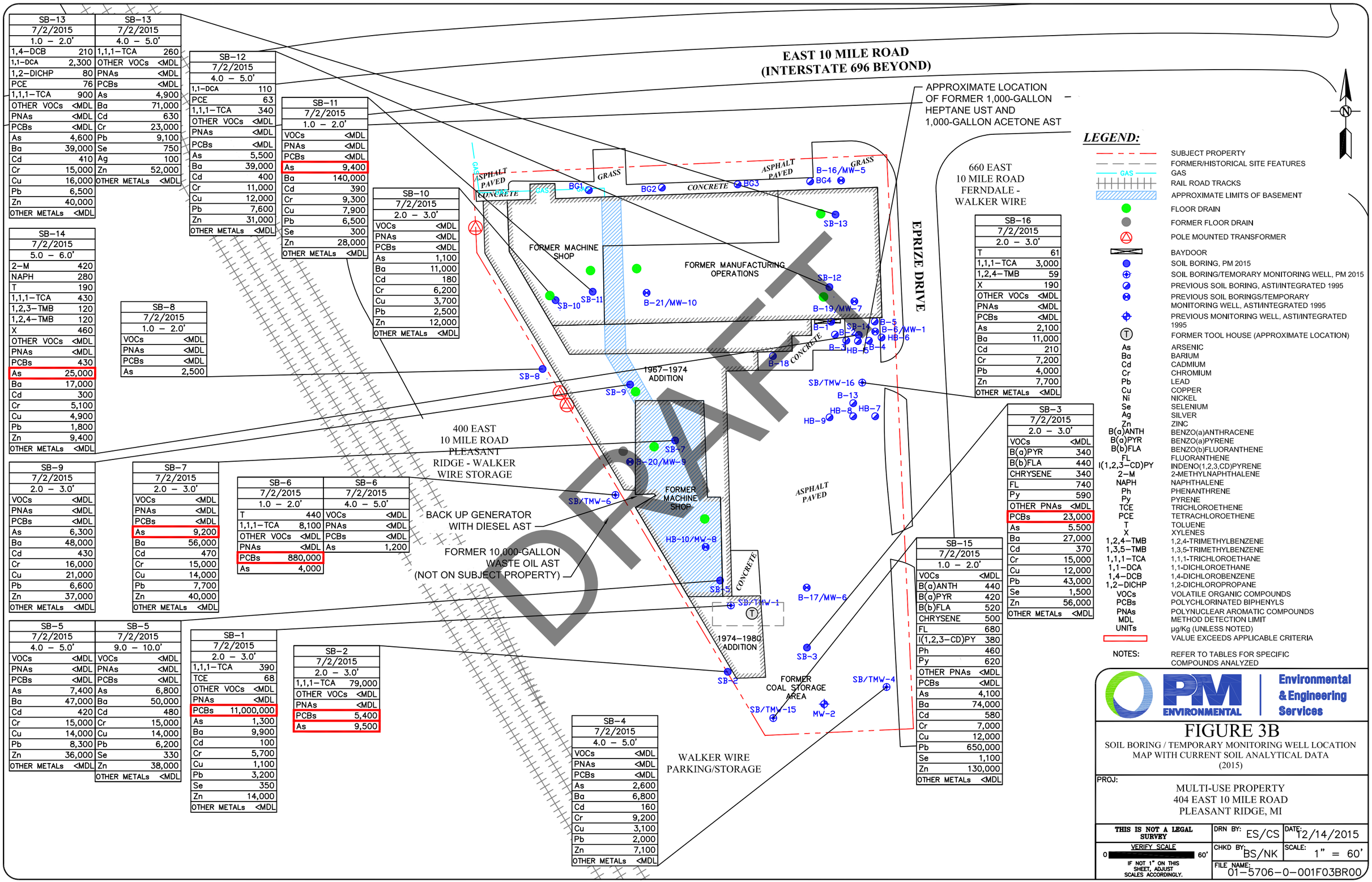


SB–13	
7/2/2015	
1.0 – 2.0'	
1,4–DCB	210
1,1–DCA	2,300
1,2–DICHP	80
PCE	76
1,1,1–TCA	900
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	4,600
Ba	39,000
Cd	410
Cr	15,000
Cu	16,000
Pb	6,500
Zn	40,000
OTHER METALs	<MDL

SB–13	
7/2/2015	
4.0 – 5.0'	
1,1,1–TCA	260
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	4,900
Ba	71,000
Cd	630
Cr	23,000
Pb	9,100
Se	750
Ag	100
Zn	52,000
OTHER METALs	<MDL

SB–14	
7/2/2015	
5.0 – 6.0'	
2–M	420
NAPH	280
T	190
1,1,1–TCA	430
1,2,3–TMB	120
1,2,4–TMB	120
X	460
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	430
As	25,000
Ba	17,000
Cd	300
Cr	5,100
Cu	4,900
Pb	1,800
Zn	9,400
OTHER METALs	<MDL

SB–12	
7/2/2015	
4.0 – 5.0'	
1,1–DCA	110
PCE	63
1,1,1–TCA	340
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	5,500
Ba	39,000
Cd	400
Cr	11,000
Cu	12,000
Pb	7,600
Zn	31,000
OTHER METALs	<MDL

SB–11	
7/2/2015	
1.0 – 2.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	9,400
Ba	140,000
Cd	390
Cr	9,300
Cu	7,900
Pb	6,500
Se	300
Zn	28,000
OTHER METALs	<MDL

SB–10	
7/2/2015	
2.0 – 3.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	1,100
Ba	11,000
Cd	180
Cr	6,200
Cu	3,700
Pb	2,500
Zn	12,000
OTHER METALs	<MDL

SB–8	
7/2/2015	
1.0 – 2.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	2,500

SB–16	
7/2/2015	
2.0 – 3.0'	
T	61
1,1,1–TCA	3,000
1,2,4–TMB	59
X	190
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	2,100
Ba	11,000
Cd	210
Cr	7,200
Pb	4,000
Zn	7,700
OTHER METALs	<MDL

SB–3	
7/2/2015	
2.0 – 3.0'	
VOCs	<MDL
B(a)PYR	340
B(b)FLA	440
CHRYSENE	340
FL	740
Py	590
OTHER PNAs	<MDL
PCBs	23,000
As	5,500
Ba	27,000
Cd	370
Cr	15,000
Cu	12,000
Pb	43,000
Se	1,500
Zn	56,000
OTHER METALs	<MDL

SB–15	
7/2/2015	
1.0 – 2.0'	
VOCs	<MDL
B(a)ANTH	440
B(a)PYR	420
B(b)FLA	520
CHRYSENE	500
FL	680
I(1,2,3–CD)PY	380
Ph	460
Py	620
OTHER PNAs	<MDL
PCBs	<MDL
As	4,100
Ba	74,000
Cd	580
Cr	7,000
Cu	12,000
Pb	650,000
Se	1,100
Zn	130,000
OTHER METALs	<MDL

SB–9	
7/2/2015	
2.0 – 3.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	6,300
Ba	48,000
Cd	430
Cr	16,000
Cu	21,000
Pb	6,600
Zn	37,000
OTHER METALs	<MDL

SB–7	
7/2/2015	
2.0 – 3.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	9,200
Ba	56,000
Cd	470
Cr	15,000
Cu	14,000
Pb	7,700
Zn	40,000
OTHER METALs	<MDL

SB–6	
7/2/2015	
1.0 – 2.0'	
T	440
1,1,1–TCA	8,100
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	880,000
As	4,000

SB–6	
7/2/2015	
4.0 – 5.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	1,200

SB–5	
7/2/2015	
4.0 – 5.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	7,400
Ba	47,000
Cd	420
Cr	15,000
Cu	14,000
Pb	8,300
Zn	36,000
OTHER METALs	<MDL

SB–5	
7/2/2015	
9.0 – 10.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	6,800
Ba	50,000
Cd	480
Cr	15,000
Cu	14,000
Pb	6,200
Se	330
Zn	38,000
OTHER METALs	<MDL

SB–1	
7/2/2015	
2.0 – 3.0'	
1,1,1–TCA	390
TCE	68
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	11,000,000
As	1,300
Ba	9,900
Cd	100
Cr	5,700
Cu	1,100
Pb	3,200
Se	350
Zn	14,000
OTHER METALs	<MDL

SB–2	
7/2/2015	
2.0 – 3.0'	
1,1,1–TCA	79,000
OTHER VOCs	<MDL
PNAs	<MDL
PCBs	5,400
As	9,500

SB–4	
7/2/2015	
4.0 – 5.0'	
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	2,600
Ba	6,800
Cd	160
Cr	9,200
Cu	3,100
Pb	2,000
Zn	7,100
OTHER METALs	<MDL

LEGEND:

- SUBJECT PROPERTY
- FORMER/HISTORICAL SITE FEATURES
- GAS
- RAIL ROAD TRACKS
- APPROXIMATE LIMITS OF BASEMENT
- FLOOR DRAIN
- FORMER FLOOR DRAIN
- POLE MOUNTED TRANSFORMER
- BAYDOOR
- SOIL BORING, PM 2015
- SOIL BORING/TEMORARY MONITORING WELL, PM 2015
- PREVIOUS SOIL BORING, ASTI/INTEGRATED 1995
- PREVIOUS SOIL BORINGS/TEMPORARY MONITORING WELL, ASTI/INTEGRATED 1995
- PREVIOUS MONITORING WELL, ASTI/INTEGRATED 1995
- (T) FORMER TOOL HOUSE (APPROXIMATE LOCATION)

As	ARSENIC
Ba	BARIUM
Cd	CADMIUM
Cr	CHROMIUM
Pb	LEAD
Cu	COPPER
Ni	NICKEL
Se	SELENIUM
Ag	SILVER
Zn	ZINC
B(a)ANTH	BENZO(a)ANTHRACENE
B(a)PYR	BENZO(a)PYRENE
B(b)FLA	BENZO(b)FLUORANTHENE
FL	FLUORANTHENE
I(1,2,3–CD)PY	INDENO(1,2,3,CD)PYRENE
2–M	2-METHYLNAPHTHALENE
NAPH	NAPHTHALENE
Ph	PHENANTHRENE
Py	PYRENE
TCE	TRICHLOROETHENE
PCE	TETRACHLOROETHENE
T	TOLUENE
X	XYLENES
1,2,4–TMB	1,2,4-TRIMETHYLBENZENE
1,3,5–TMB	1,3,5-TRIMETHYLBENZENE
1,1,1–TCA	1,1,1-TRICHLOROETHANE
1,1–DCA	1,1-DICHLOROETHANE
1,4–DCB	1,4-DICHLOROBENZENE
1,2–DICHP	1,2-DICHLOROPROPANE
VOCs	VOLATILE ORGANIC COMPOUNDS
PCBs	POLYCHLORINATED BIPHENYLS
PNAs	POLYNUCLEAR AROMATIC COMPOUNDS
MDL	METHOD DETECTION LIMIT
UNITs	µg/Kg (UNLESS NOTED)
	VALUE EXCEEDS APPLICABLE CRITERIA

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

PM ENVIRONMENTAL — Environmental & Engineering Services

FIGURE 3B

SOIL BORING / TEMPORARY MONITORING WELL LOCATION MAP WITH CURRENT SOIL ANALYTICAL DATA (2015)

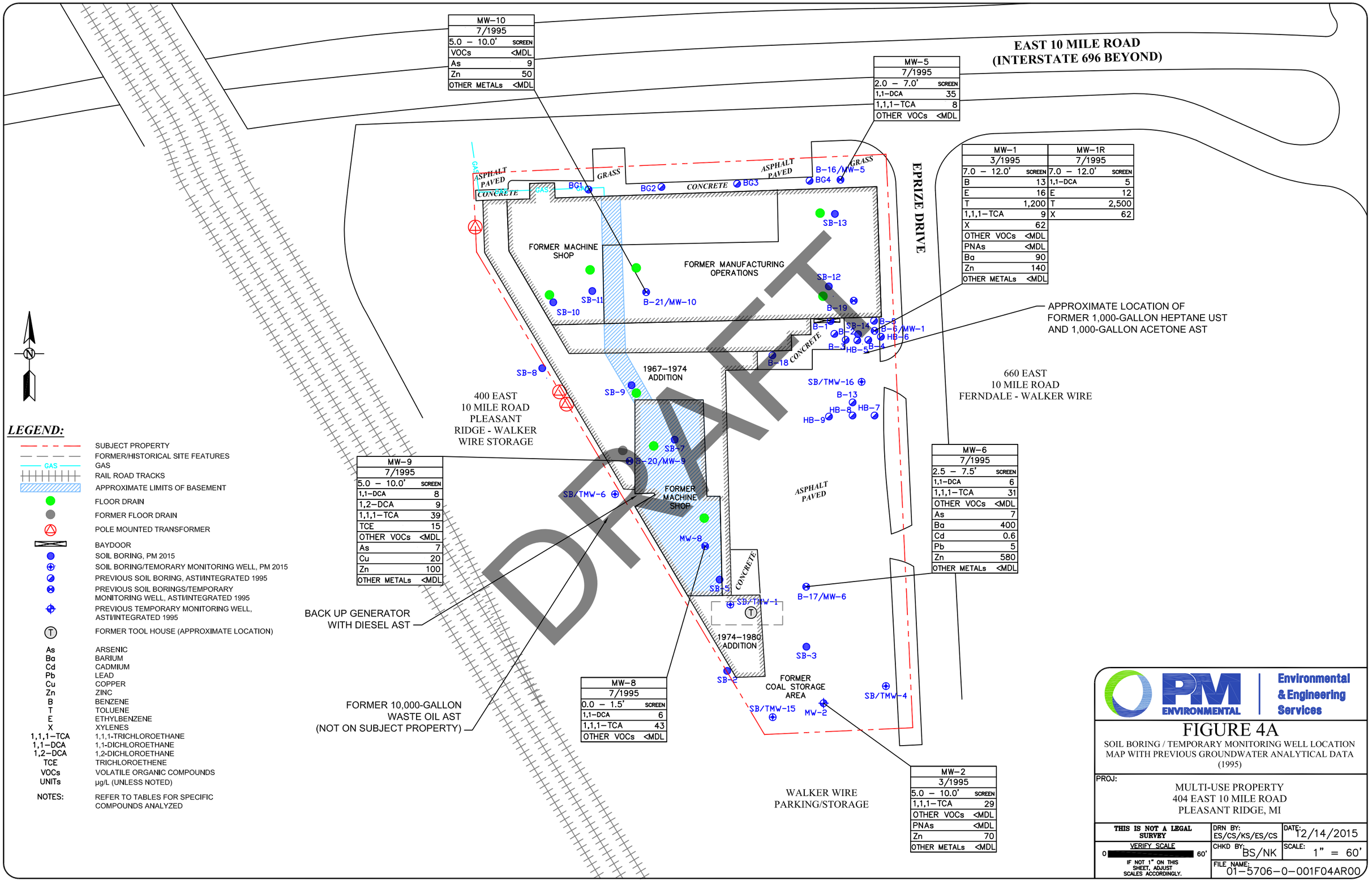
PROJ:

MULTI-USE PROPERTY
404 EAST 10 MILE ROAD
PLEASANT RIDGE, MI

THIS IS NOT A LEGAL SURVEY

VERIFY SCALE 0 60'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRN BY: ES/CS | DATE: 12/14/2015
CHKD BY: BS/NK | SCALE: 1" = 60'
FILE NAME: 01–5706–0–001F03BR00



LEGEND:

- SUBJECT PROPERTY
- FORMER/HISTORICAL SITE FEATURES
- GAS — GAS
- RAIL ROAD TRACKS
- APPROXIMATE LIMITS OF BASEMENT
- FLOOR DRAIN
- FORMER FLOOR DRAIN
- POLE MOUNTED TRANSFORMER
- BAYDOOR
- SOIL BORING, PM 2015
- SOIL BORING/TEMORARY MONITORING WELL, PM 2015
- PREVIOUS SOIL BORING, ASTI/INTEGRATED 1995
- PREVIOUS SOIL BORINGS/TEMPORARY MONITORING WELL, ASTI/INTEGRATED 1995
- PREVIOUS TEMPORARY MONITORING WELL, ASTI/INTEGRATED 1995
- (T) FORMER TOOL HOUSE (APPROXIMATE LOCATION)

As	ARSENIC
Ba	BARIUM
Cd	CADMIUM
Pb	LEAD
Cu	COPPER
Zn	ZINC
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	XYLENES
1,1,1–TCA	1,1,1-TRICHLOROETHANE
1,1–DCA	1,1-DICHLOROETHANE
1,2–DCA	1,2-DICHLOROETHANE
TCE	TRICHLOROETHENE
VOCs	VOLATILE ORGANIC COMPOUNDS
UNITs	µg/L (UNLESS NOTED)
NOTES:	REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

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FIGURE 4A

SOIL BORING / TEMPORARY MONITORING WELL LOCATION MAP WITH PREVIOUS GROUNDWATER ANALYTICAL DATA (1995)

PROJ:

MULTI-USE PROPERTY
404 EAST 10 MILE ROAD
PLEASANT RIDGE, MI

THIS IS NOT A LEGAL SURVEY

VERIFY SCALE
0 60'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRN BY: ES/CS/KS/ES/CS
CHKD BY: BS/NK
FILE NAME: 01–5706–0–001F04AR00
DATE: 12/14/2015
SCALE: 1" = 60'

EAST 10 MILE ROAD
(INTERSTATE 696 BEYOND)

EPRIZE DRIVE

ASPHALT PAVED
CONCRETE
GRASS
GAS
BG1
BG2
BG3
BG4
B-16/MW-5
SB-13
FORMER MACHINE SHOP
FORMER MANUFACTURING OPERATIONS
SB-10
SB-11
B-21/MW-10
SB-12
B-19/MW-7
B-1
B-2
B-3
SB-14
B-5
B-6/MW-1
HB-6
HB-5
B-4
B-18
1967–1974 ADDITION
SB-8
SB-9
SB/TMW-16
B-13
HB-8
HB-7
HB-9
SB-7
B-20/MW-9
SB/TMW-6
FORMER MACHINE SHOP
HB-10/MW-8
SB-5
SB/TMW-1
B-17/MW-6
1974–1980 ADDITION
SB-3
SB-2
FORMER COAL STORAGE AREA
SB/TMW-15
MW-2
SB/TMW-4

APPROXIMATE LOCATION OF FORMER 1,000-GALLON HEPTANE UST AND 1,000-GALLON ACETONE AST

660 EAST
10 MILE ROAD
FERNDALE - WALKER WIRE

400 EAST
10 MILE ROAD
PLEASANT RIDGE - WALKER WIRE STORAGE

BACK UP GENERATOR WITH DIESEL AST

FORMER 10,000-GALLON WASTE OIL AST (NOT ON SUBJECT PROPERTY)

WALKER WIRE PARKING/STORAGE

TMW–6	
7/2/2015	
8.50 – 13.50'	SCREEN
1,1,1–TCA	7
OTHER VOCs	<MDL
PNAs	<MDL

TMW–16	
7/2/2015	
8.50 – 13.50'	SCREEN
VOCs	<MDL
PNAs	<MDL

TMW–4	
7/2/2015	
9.55 – 14.55'	SCREEN
1,1–DCA	3
1,1,1–TCA	10
OTHER VOCs	<MDL
PNAs	<MDL

TMW–1	
7/2/2015	
5.55 – 10.55'	SCREEN
1,1,1–TCA	7
OTHER VOCs	<MDL
PNAs	<MDL
Cd	0.2
Ag	0.2
OTHER METALs	<MDL

TMW–15	
7/2/2015	
5.90 – 10.90'	SCREEN
1,1,1–TCA	24
OTHER VOCs	<MDL
PNAs	<MDL
METALS	<MDL

LEGEND:

- SUBJECT PROPERTY
- FORMER/HISTORICAL SITE FEATURES
- GAS — GAS
- RAIL ROAD TRACKS
- APPROXIMATE LIMITS OF BASEMENT
- FLOOR DRAIN
- FORMER FLOOR DRAIN
- POLE MOUNTED TRANSFORMER
- BAYDOOR
- SOIL BORING, PM 2015
- SOIL BORING/TEMORARY MONITORING WELL, PM 2015
- PREVIOUS SOIL BORING, ASTI/INTEGRATED 1995
- PREVIOUS SOIL BORINGS/TEMPORARY MONITORING WELL, ASTI/INTEGRATED 1995
- PREVIOUS TEMPORARY MONITORING WELL, ASTI/INTEGRATED 1995
- (T) FORMER TOOL HOUSE (APPROXIMATE LOCATION)

Cd	CADMIUM
Ag	SILVER
1,1,1–TCA	1,1,1-TRICHLOROETHANE
1,1–DCA	1,1-DICHLOROETHANE
VOCs	VOLATILE ORGANIC COMPOUNDS
MDL	METHOD DETECTION LIMIT
UNITs	µg/Kg (UNLESS NOTED)
NOTES:	REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

PM ENVIRONMENTAL
Environmental & Engineering Services

FIGURE 4B

SOIL BORING / TEMPORARY MONITORING WELL LOCATION MAP WITH CURRENT GROUNDWATER ANALYTICAL DATA

PROJ:
MULTI-USE PROPERTY
404 EAST 10 MILE ROAD
PLEASANT RIDGE, MI

THIS IS NOT A LEGAL SURVEY

VERIFY SCALE
0 60'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRN BY: ES/CS/KS/CS
CHKD BY: BS/NK
FILE NAME: 01–5706–0–001F04BR00
DATE: 12/14/2015
SCALE: 1" = 60'

SB-32	
11/24/2015	
2.0 ~ 3.0'	3.5 ~ 4.5'
PCBs 4,300	PCBs <MDL

B18-1	B18-3
7/1995	7/1995
0.0 – 2.0'	4.0 – 6.0'
PCBs 440	PCBs <MDL

SB-42
11/24/2015
2.0 ~ 3.0'
PCBs <MDL

SB-33
8/31/2015
1.0 – 2.0'
PCBs <MDL

SB-34	SB-34
8/31/2015	8/31/2015
2.0 – 3.0'	7.5 – 8.5'
PCBs <MDL	PCBs <MDL

SB-12
7/2/2015
4.0 – 5.0'
PCBs <MDL

B16-1	B16-3
7/1995	7/1995
0.0 – 2.0'	4.0 – 6.0'
PCBs <MDL	PCBs <MDL

SB-13	SB-13
7/2/2015	7/2/2015
1.0 – 2.0'	4.0 – 5.0'
PCBs <MDL	PCBs <MDL

B1-1
3/1995
2.0 – 4.0'
PCBs <MDL

B19-2	B19-3
7/1995	7/1995
2.0 – 4.0'	4.0 – 6.0'
PCBs <MDL	PCBs <MDL

SB-37	SB-37
8/31/2015	8/31/2015
2.0 – 3.0'	8.0 – 9.0'
PCBs 1,800	PCBs <MDL

B3-1
3/1995
0.0 – 2.0'
PCBs <MDL

SB-14
7/2/2015
5.0 – 6.0'
PCBs 430

HB6
3/1995
0.0 – 3.0'
PCBs 17,000

HB5
3/1995
0.0 – 3.0'
PCBs 390

SB-10
7/2/2015
2.0 – 3.0'
PCBs <MDL

SB-11
7/2/2015
1.0 – 2.0'
PCBs <MDL

SB-31
8/31/2015
2.0 – 3.0'
PCBs 1,800

SB-49
11/24/2015
2.0 ~ 3.0'
PCBs <MDL

SB-28	SB-28	SB-28
8/31/2015	8/31/2015	8/31/2015
1.0 – 2.0'	2.0 – 3.0'	7.0 – 8.0'
PCBs 7,000	PCBs 14,000	PCBs <MDL

SB-48
11/24/2015
2.0 ~ 3.0'
PCBs <MDL

SB-36	SB-36
8/31/2015	8/31/2015
2.0 ~ 3.0'	7.0 ~ 8.0'
PCBs 300	PCBs 250

HB9
3/1995
0.0 – 3.0'
PCBs 390

HB7
3/1995
0.0 – 3.0'
PCBs 930

HB8
3/1995
0.0 – 3.0'
PCBs 860

SB-16
7/2/2015
2.0 – 3.0'
PCBs <MDL

B13-4	B13-5
3/1995	3/1995
6.0 – 8.0'	8.0 – 10.0'
PCBs 430	PCBs <MDL

SB-46	SB-46
11/24/2015	11/24/2015
2.0 ~ 3.0'	5.0 ~ 6.0'
PCBs 11,000	PCBs <MDL

SB-30	SB-30
8/31/2015	8/31/2015
2.0 – 3.0'	7.5 – 8.5'
PCBs <MDL	PCBs <MDL

SB-29	SB-29
8/31/2015	8/31/2015
2.0 – 3.0'	6.5 – 7.5'
PCBs 10,000	PCBs <MDL

SB-47	SB-47
11/24/2015	11/24/2015
2.0 ~ 3.0'	6.5 ~ 7.5'
PCBs 21,000	PCBs <MDL

EAST 10 MILE ROAD
(INTERSTATE 696 BEYOND)

EPRIZE DRIVE

660 EAST
10 MILE ROAD
FERNDALE -
WALKER WIRE

400 EAST 10 MILE ROAD
PLEASANT RIDGE - WALKER
WIRE STORAGE

BACK UP GENERATOR
WITH DIESEL AST
FORMER 10,000-GALLON
WASTE OIL AST
(NOT ON SUBJECT PROPERTY)

WALKER WIRE
PARKING/STORAGE

FORMER MACHINE SHOP

FORMER MANUFACTURING OPERATIONS

1967–1974 ADDITION

1974–1980 ADDITION

FORMER MACHINE SHOP

FORMER COAL STORAGE AREA

APPROXIMATE LOCATION
OF FORMER 1,000-GALLON
HEPTANE UST AND
1,000-GALLONACETONE AST

ASPHALT PAVED

CONCRETE

GRASS

GAS

B-16/MW-5 SB-13 SB-12 B-19 SB-37 B-1 SB-14 HB-6 SB-42 SB-33 SB-34 B-3 HB-5 B-18 SB-36 SB-32 SB-31 SB-8 SB-9 SB/TMW-16 B-13 HB-8 HB-9 HB-7 SB-49 SB-7 SB-28 SB-36 B-20/MW-9 SB-51 SB-29 SB-26 SB-48 SB-27 SB-50 SB-47 SB-46 SB-25 SB-23 SB-24 SB-22 B-17/MW-6 SB-45 SB-40 SB-1R/TMW-1 SB-41 SB-38 T SB-21 SB-20 SB-39 SB-54 SB-52 SB-3/SB-3R SB-53 SB-43 SB-18 SB-19 SB-55 SB-2 SB/TMW-4 SB-17 SB-44 SB/TMW-15 SB-10 SB-11

DRAFT

LEGEND:

- SUBJECT PROPERTY
- FORMER/HISTORICAL SITE FEATURES
- GAS
- RAIL ROAD TRACKS
- APPROXIMATE LIMITS OF BASEMENT
- FLOOR DRAIN
- FORMER FLOOR DRAIN
- POLE MOUNTED TRANSFORMER
- BAYDOOR
- SOIL BORING, PM 2015
- SOIL BORING/TEMORARY MONITORING WELL, PM 2015
- PREVIOUS SOIL BORING, ASTI/INTEGRATED 1995
- PREVIOUS SOIL BORINGS/TEMPORARY MONITORING WELL, ASTI/INTEGRATED 1995
- PREVIOUS MONITORING WELL, ASTI/INTEGRATED 1995
- T FORMER TOOL HOUSE (APPROXIMATE LOCATION)

PCBs POLYCHLORINATED BIPHENYLS
MDL METHOD DETECTION LIMIT
UNITs µg/Kg (UNLESS NOTED)
VALUE EXCEEDS APPLICABLE CRITERIA

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

PM ENVIRONMENTAL | Environmental & Engineering Services

FIGURE 5A

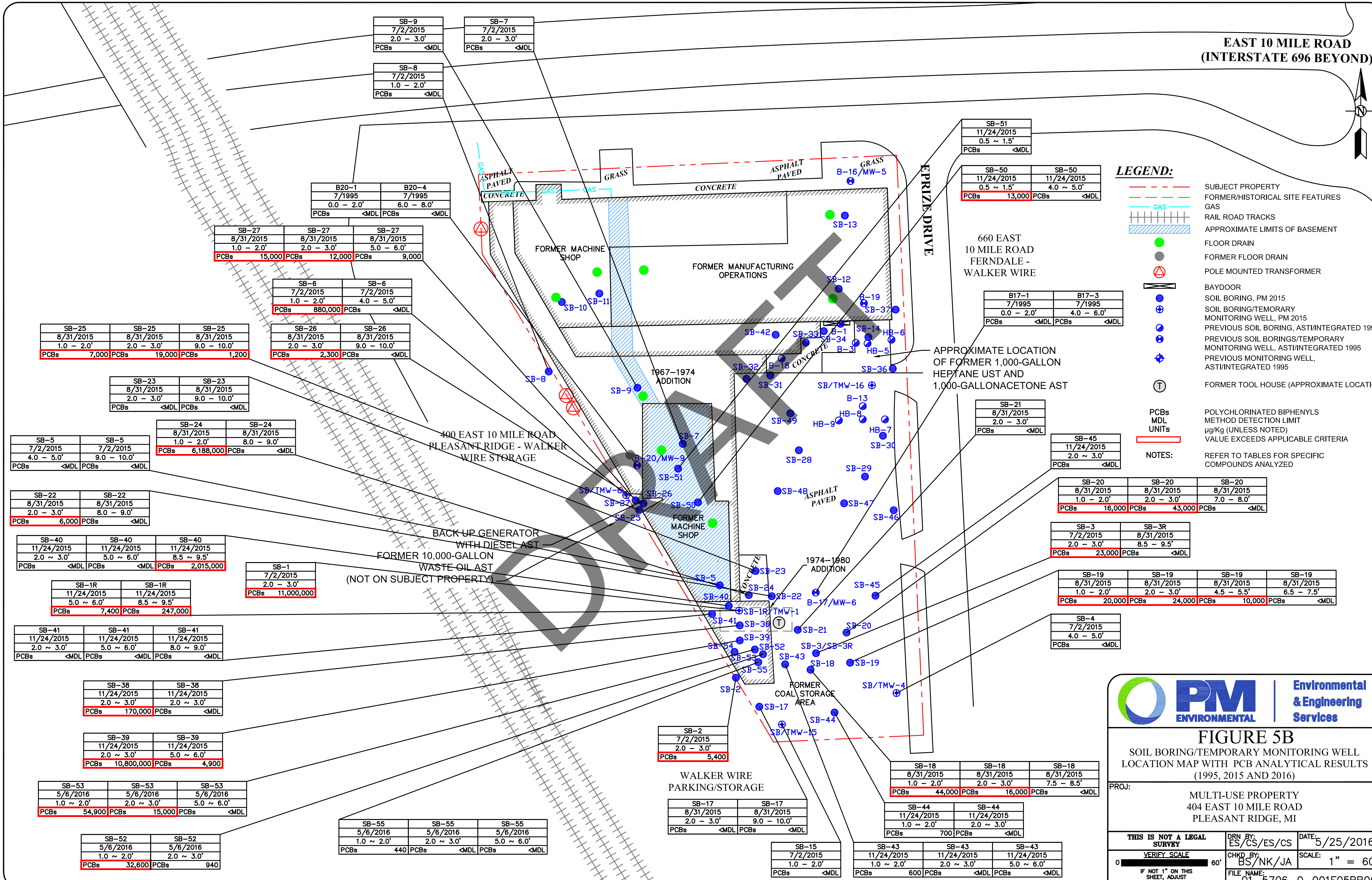
SOIL BORING/TEMPORARY MONITORING WELL LOCATION MAP WITH PCB ANALYTICAL RESULTS (1995, 2015 AND 2016)

PROJ:
MULTI-USE PROPERTY
404 EAST 10 MILE ROAD
PLEASANT RIDGE, MI

THIS IS NOT A LEGAL SURVEY

VERIFY SCALE
0 60'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRN BY: ES/CS/ES/CS
DATE: 5/25/2016
CHKD BY: BS/NK/JA
SCALE: 1" = 60'
FILE NAME: 01-5706-0-001F05AR00



PM ENVIRONMENTAL | Environmental & Engineering Services

FIGURE 5B

SOIL BORING/TEMPORARY MONITORING WELL LOCATION MAP WITH PCB ANALYTICAL RESULTS (1995, 2015 AND 2016)

PROJ: MULTI-USE PROPERTY
404 EAST 10 MILE ROAD
PLEASANT RIDGE, MI

THIS IS NOT A LEGAL SURVEY

VERIFY SCALE 0 — 60'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRN BY: ES/CS/ES/CS
DATE: 5/25/2016
CHKD BY: BS/NK/JA
SCALE: 1" = 60'
FILE NAME: 01-5706-0-001F05BR00

Tables

PM ENVIRONMENTAL Environmental & Engineering Services

TABLE 1
ASTI MARCH 1995 AND INTEGRATED JULY 1995
SUMMARY OF SOIL ANALYTICAL RESULTS
VOCs AND PNAs
404 EAST 10 MILE ROAD, PLEASANT RIDGE, MICHIGAN
PM PROJECT # 01-5706-1-0002

VOLATILE ORGANIC COMPOUNDS (VOCs) AND POLYNUCLEAR AROMATIC COMPOUNDS (PNAs) (µg/Kg)			1,1-Dichloroethane	Ethylbenzene	Tetrachloroethylene	Toluene	1,1,1-Trichloroethane	Trichloroethylene	Xylenes	Other VOCs	Acenaphthene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	Other PNAs
Chemical Abstract Service Number (CAS#)			75343	100414	127184	108883	71556	79016	1330207	Various	83329	56553	50328	205992	207089	191242	218019	206440	86737	91203	85018	129000	Various
Sample ID	**Sample Date**	**Sample Depth (feet bgs)**	**VOCs**								**PNAs**												
ASTI March 1995																							
B1-1	3/13/1995	2.0-4.0	<10	<100	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B1-5	3/13/1995	8.0-10.0	<10	<100	<10	<10	<10	<10	<30	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B1-7	3/13/1995	12.0-14.0	<10	<100	<10	<10	<10	<10	<30	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B2-4	3/13/1995	6.0-8.0	<10	<100	<10	<10	<10	<10	<30	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B2-7	3/13/1995	12.0-14.0	<10	<100	<10	<10	<10	<10	<30	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B3-1	3/13/1995	0.0-2.0	<10	<100	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B3-4	3/13/1995	6.0-8.0	<10	<100	<10	<10	<10	<10	<30	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B3-7	3/13/1995	12.0-14.0	<10	<100	<10	<10	<10	<10	<30	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B4-4	3/13/1995	6.0-8.0	<10	<100	<10	<10	<10	<10	<30	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B4-7	3/13/1995	12.0-14.0	<10	<100	<10	<10	<10	<10	<30	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B5-4	3/13/1995	6.0-8.0	<10	<100	<10	<10	<10	<10	<30	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B5-7	3/13/1995	12.0-14.0	<10	<100	<10	<10	<10	<10	<30	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B6-5	3/13/1995	8.0-10.0	<10	800	<10	19,000	<10	<10	3,000	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B6-8	3/13/1995	14.0-16.0	<10	<100	<10	<10	<10	<10	<30	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B13-4	3/14/1995	6.0-8.0	<10	<100	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B13-5	3/14/1995	8.0-10.0	<10	<100	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
HB1	March 1995	0.0-3.0	<10	<100	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
HB2	March 1995	0.0-3.0	<10	<100	<10	<10	31	<10	<30	<MDL	13,000	2,000	900	2,000	1,800	<330	1,400	2,000	960	3,000	1,100	3,900	<MDL
HB3	March 1995	0.0-3.0	<10	<100	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
HB4	March 1995	0.0-3.0	<10	<100	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
HB5	March 1995	0.0-3.0	<10	<100	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
HB6	March 1995	0.0-3.0	<10	<100	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
HB7	March 1995	0.0-3.0	<10	<100	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
HB8	March 1995	0.0-3.0	<10	<100	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
HB9	March 1995	0.0-3.0	<10	<100	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
IE August 1995																							
B2-4R	July 1995	6.0-8.0	<10	<100	<10	<10	<10	<10	<10	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B3-4R	July 1995	6.0-8.0	<10	<100	<10	<10	<10	<10	<10	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B14-1	7/25/1995	0.0-2.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B14-4	7/25/1995	6.0-8.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B15-1	7/25/1995	0.0-2.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B15-4	7/25/1995	6.0-8.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B16-1	7/25/1995	0.0-2.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B16-3	7/25/1995	4.0-6.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B17-1	7/25/1995	0.0-2.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B17-3	7/25/1995	4.0-6.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B18-1	7/25/1995	0.0-2.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B18-3	7/25/1995	4.0-6.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B19-2	7/26/1995	2.0-4.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B19-3	7/26/1995	4.0-6.0	75	<10	<10	<10	50	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B20-1	7/26/1995	0.0-2.0	<10	<10	13	13	<10	24	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B20-4	7/26/1995	6.0-8.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B21-2	7/27/1995	4.0-6.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
B21-3	7/27/1995	6.0-8.0	<10	<10	<10	<10	<10	<10	<30	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) **Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013**																							
Residential (µg/Kg)																							
Drinking Water Protection (Res DWP)			18,000	1,500	100	16,000	4,000	100	5,600	Various	3.00E+05	NLL	NLL	NLL	NLL	NLL	NLL	7.30E+05	3.90E+05	35,000	56,000	4.80E+05	Various
Groundwater Surface Water Interface Protection (GSIP)			15,000	360	1,200 {X}	5,400	1,800	4,000 {X}	820	Various	8,700	NLL	NLL	NLL	NLL	NLL	NLL	5,500	5,300	730	2,100	ID	Various
Soil Volatilization to Indoor Air Inhalation (Res SVII)			2.30E+05	87,000	11,000	3.3E+05 {C}	2.50E+05	1,000	6.3E+06 {C}	Various	1.9E+08	NLV	NLV	ID	NLV	NLV	ID	1.0E+9 {D}	5.8E+08	2.50E+05	2.8E+06	1.0E+9 {D}	Various
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)			2.10E+06	7.20E+05	1.70E+05	2.80E+06	3.80E+06	11,000	4.60E+07	Various	8.1E+07	NLV	NLV	ID	NLV	NLV	ID	7.40E+08	1.3E+08	3.0E+05	1.6E+05	6.5E+08	Various
Ambient Air Finite VSI for 5 Meter Source Thickness			5.90E+06	1.00E+06	4.80E+05	5.10E+06	1.20E+07	25,000	6.10E+07	Various	8.1E+07	NLV	NLV	ID	NLV	NLV	ID	7.4E+08	1.3E+08	3.0E+05	1.6E+05	6.5E+08	Various
Ambient Air Finite VSI for 2 Meter Source Thickness			1.40E+07	2.20E+06	1.1E+06	1.20E+07	2.80E+07	57,000	1.30E+08	Various	8.1E+07	NLV	NLV	ID	NLV	NLV	ID	7.4E+08	1.3E+08	3.0E+05	1.6E+05	6.5E+08	Various
Ambient Air Particulate Soil Inhalation (Res PSI)			3.30E+10	1.00E+10	2.7E+09	2.70E+10	6.70E+10	1.30E+08	2.90E+11	Various	1.4E+10	ID	1.5E+06	ID	ID	8.0E+08	ID	9.3E+09	9.3E+09	2.0E+08	6.7E+06	6.7E+09	Various
Direct Contact (Res DC)			2.7E+07 {C}	2.2E+07 {C}	2.0E+05 {C}	5.0E+07 {C}	5.0E+08 {C}	5.0E+5 {C,DD}	4.1E+08 {C}	Various	4.1E+07	20,000	2,000	20,000	2.00E+05	2.5E+06	2.0E+06	4.6E+07	2.7E+07	1.6E+07	1.6E+06	2.9E+07	Various
Nonresidential (µg/Kg)																							
Drinking Water Protection (Nonres DWP)			50,000	1,500	100	16,000	4,000	100	5,600	Various	8.80E+05	NLL	NLL	NLL	NLL	NLL	NLL	7.30E+05	8.90E+05	1.00E+05	1.60E+05	4.80E+05	Various
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)			4.30E+05	4.6E+05 {C}	21,000	6.1E+05 {C}	4.60E+05	1,900	1.2E+07 {C}	Various	3.5E+08	NLV	NLV	ID	NLV	NLV	ID	1.0E+9 {D}	1.0E+9 {D}	4.70E+05	5.1E+06	1.0E+9 {D}	Various
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)			2.50E+06	2.40E+06	2.10E+05	3.30E+06	4.50E+06	14,000	5.40E+07	Various	9.7E+07	NLV	NLV	ID	NLV	NLV	ID	8.9E+08	1.5E+08	3.50E+05	1.90E+05	7.8E+08	Various
Ambient Air Finite VSI for 5 Meter Source Thickness			6.00E+06	3.10E+06	4.90E+05	3.60E+07	1.50E+07	25,000	6.50E+07	Various	9.7E+07	NLV	NLV	ID	NLV	NLV	ID	8.8E+08	1.5E+08	3.50E+05	1.90E+05	7.8E+08	Various
Ambient Air Finite VSI for 2 Meter Source Thickness			1.40E+07	6.50E+06	1.1E+06	3.60E+07	3.10E+07	58,000	1.30E+08	Various	9.7E+07	NLV	NLV	ID	NLV	NLV	ID	8.8E+08	1.5E+08	3.50E+05	1.90E+05	7.8E+08	Various
Ambient Air Particulate Soil Inhalation (Nonres PSI)			1.50E+10	1.30E+10	1.2E+09	1.20E+10	2.90E+10	5.90E+07	1.30E+11	Various	6.2E+09	ID	1.9E+06	ID	ID	3.5E+08	ID	4.1E+09	4.1E+09	8.8E+07	2.9E+06	2.9E+09	Various
Direct Contact (Nonres DC)			8.7E+07 {C}	7.1E+07 {C}	9.3E+05 {C}	1.6E+08 {C}	1.0E+09 {C}	6.6E+05 {C,DD}	1.0E+09 {C}	Various	1.3E+08	80,000	8,000	80,000	8.00E+05	7.0E+06	8.0E+06	1.3E+08	8.7E+07	5.2E+07	5.2E+06	8.4E+07	Various
Screening Levels (µg/Kg)																							
Soil Saturation Concentration Screening Levels (Csat)			8.90E+05	1.40E+05	88,000	2.50E+05	4.60E+05	5.00E+05	1.50E+05	Various	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Various

	Applicable Criterion/RBSL Exceeded
	Soil boring was advanced on west-adjoining property identified as 400 East Ten Mile Road, Pleasant Ridge, MI 48069
BOLD	Value Exceeds Applicable Criterion/RBSL
bgs	Below Ground Surface (feet)
MDL	Laboratory Method Detection Limit
NA/NL/ID	Not Applicable/Not Listed/Insufficient Data
NLL/NLV	Not Likely to Leach/Not Likely to Volatilize

TABLE 2
ASTI MARCH 1995 AND INTEGRATED JULY 1995
SUMMARY OF SOIL ANALYTICAL RESULTS
PCBs AND METALS
404 EAST 10 MILE ROAD, PLEASANT RIDGE, MICHIGAN
PM PROJECT # 01-5706-1-0002

POLYCHLORINATED BIPHENYLS (PCBs) AND METALS (µg/Kg)			PCBs	Aluminum	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel (B)	Selenium	Silver	Zinc
Chemical Abstract Service Number (CAS#)			1336363	7429905	7440382	7440393	7440439	16065831	7440484	7440508	7439921	7439976	7440020	7782492	7440224	7440666
Sample ID	**Sample Date**	**Sample Depth (feet bgs)**	**PCBs**	**Metals**												
ASTI March 1995																
B1-1	3/13/1995	2.0-4.0	ND	3.6E+06	**50,000**	73,000	360	7,400	5,400	4,400	4,400	<100	4,000	700	<50	25,000
B3-1	3/13/1995	0.0-2.0	ND	5.9E+06	**67,000**	88,000	90	9,400	7,400	8,800	8,200	<100	18,000	<50	<50	35,000
B7-4	3/14/1995	6.0-8.0	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B7-6	3/14/1995	10.0-12.0	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B8-3	3/14/1995	4.0-6.0	570	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B8-6	3/14/1995	10.0-12.0	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B9-5	3/14/1995	8.0-10.0	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B9-7	3/14/1995	12.0-14.0	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B10-4	3/14/1995	6.0-8.0	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B10-6	3/14/1995	10.0-12.0	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B11-5	3/14/1995	8.0-10.0	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B11-7	3/14/1995	12.0-14.0	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B12-5	3/14/1995	8.0-10.0	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B12-7	3/14/1995	12.0-14.0	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B13-4	3/14/1995	6.0-8.0	430	2.1E+06	1,300	57,000	100	8,500	13,000	5,700	9,800	<100	4,100	<500	<500	34,000
B13-5	3/14/1995	8.0-10.0	ND	8.3E+06	**21,000**	120,000	80	13,000	7,400	12,000	7,400	<100	15,000	<500	<500	49,000
HB1	March 1995	0.0-3.0	1,700	2.5E+06	8,000	230,000	1,100	17,000	25,000	12,000	57,000	<100	5,300	1,200	<500	73,000
HB2	March 1995	0.0-3.0	12,000	1.4E+06	7,700	290,000	850	12,000	50,000	10,000	33,000	<100	4,600	<500	<500	63,000
HB3	March 1995	0.0-3.0	7,800	2.4E+06	7,300	100,000	<50	17,000	29,000	9,000	30,000	<100	3,200	<500	<500	54,000
HB4	March 1995	0.0-3.0	14,000	4.0E+06	4,400	310,000	21	31,000	3,500	10,000	40,000	<100	1,300	600	<500	55,000
HB5	March 1995	0.0-3.0	390	3.2E+06	7,500	50,000	1,200	11,000	190,000	9,700	21,000	<100	4,900	1,000	<500	39,000
HB6	March 1995	0.0-3.0	**17,000**	5.3E+06	**19,000**	68,000	250	10,000	130,000	11,000	19,000	<100	8,200	<500	<500	65,000
HB7	March 1995	0.0-3.0	930	2.3E+06	6,500	36,000	100	6,400	73,000	5,500	13,000	<100	11,000	<500	<500	57,000
HB8	March 1995	0.0-3.0	860	3.4E+06	5,000	64,000	140	9,000	54,000	11,000	23,000	<100	4,200	<500	<500	50,000
HB9	March 1995	0.0-3.0	390	3.8E+06	6,500	60,000	140	12,000	18,000	9,100	<1,000	<100	7,000	<500	<500	51,000
BG1	March 1995	5.0-7.0	NA	1.6E+06	2,700	42,000	<50	4,300	1,800	<2,000	1,600	<100	2,200	<500	<500	19,000
BG2	March 1995	5.0-7.0	NA	1.7E+06	3,700	43,000	60	5,200	2,800	4,400	2,000	<100	3,200	<500	<500	20,000
BG3	March 1995	5.0-7.0	NA	1.7E+06	6,000	210,000	<50	5,400	2,900	10,000	1,500	<100	3,700	120,000	<500	24,000
BG4	March 1995	5.0-7.0	NA	1.7E+06	5,700	32,000	110	6,100	2,500	<2,000	<1,000	<100	3,000	<500	<500	17,000
IE August 1995																
B14-1	7/25/1995	0.0-2.0	7,400	NA	6,500	24,000	170	6,200	NA	4,900	13,000	100	NA	<500	<500	36,000
B14-4	7/25/1995	6.0-8.0	<330	NA	4,300	13,000	80	3,500	NA	2,400	1,100	<100	NA	<500	<500	18,000
B15-1	7/25/1995	0.0-2.0	<330	NA	15,000	28,000	190	8,000	NA	6,900	7,500	<100	NA	<500	<500	39,000
B15-4	7/25/1995	6.0-8.0	<330	NA	4,600	20,000	130	5,800	NA	3,500	1,000	<100	NA	<500	<500	22,000
B16-1	7/25/1995	0.0-2.0	<330	NA	9,100	53,000	130	8,300	NA	6,200	7,400	<100	NA	<500	<500	34,000
B16-3	7/25/1995	4.0-6.0	<330	NA	**36,000**	130,000	180	7,900	NA	3,000	<1,000	300	NA	<500	<500	25,000
B17-1	7/25/1995	0.0-2.0	<330	NA	5,500	19,000	110	5,200	NA	4,000	7,800	<100	NA	<500	<500	30,000
B17-3	7/25/1995	4.0-6.0	<330	NA	3,900	14,000	<50	3,500	NA	2,000	<1,000	<100	NA	<500	<500	19,000
B18-1	7/25/1995	0.0-2.0	440	NA	**9,400**	52,000	190	7,200	NA	16,000	23,000	<100	NA	<500	<500	51,000
B18-3	7/25/1995	4.0-6.0	<330	NA	5,600	25,000	70	5,700	NA	4,000	1,300	<100	NA	<500	<500	24,000
B19-2	7/26/1995	2.0-4.0	<330	NA	7,500	21,000	<50	5,600	NA	<1,000	<1,000	<100	NA	<500	<500	22,000
B19-3	7/26/1995	4.0-6.0	<330	NA	4,900	32,000	110	4,600	NA	3,300	1,700	<100	NA	<500	<500	51,000
B20-1	7/26/1995	0.0-2.0	<330	NA	**21,000**	90,000	1,200	9,000	NA	17,000	57,000	<100	NA	1,400	<500	240,000
B20-4	7/26/1995	6.0-8.0	<330	NA	4,800	24,000	70	4,800	NA	2,000	<1,000	<100	NA	<500	<500	20,000
B21-2	7/27/1995	4.0-6.0	NA	NA	**27,000**	55,000	160	7,800	NA	3,000	5,400	<100	NA	<500	<500	38,000
B21-3	7/27/1995	6.0-8.0	NA	NA	**38,000**	33,000	<50	5,200	NA	<1,000	<1,000	<100	NA	<500	<500	23,000

Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50)
Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013
MDEQ Guidance Document For The Vapor Intrusion Pathway, Policy and Procedure Number: 09-017, Appendix D Vapor Intrusion Screening Values, May 2013

Residential (µg/Kg)														
Statewide Default Background Levels (SDBLs)	NA	6.90E+06	5,800	75,000	1,200	18,000	6,800	32,000	21,000	130	20,000	410	1,000	47,000
Drinking Water Protection (Res DWP)	NLL	1,000	4,600	1.30E+06	6,000	30,000	800	5.80E+06	7.00E+05	1,700	100,000	4,000	4,500	2.40E+06
Groundwater Surface Water Interface Protection (GSIP)	NLL	NA	4,600	8.2E+05 {G}	5,600 {G,X}	3,300	2,000	1.2E+05 {G}	5.2E+06 {G,X}	50 {M}; 1.2	1.2E+05 (G)	400	100 {M}; 27	2.7E+05 {G}
Soil Volatilization to Indoor Air Inhalation (Res SVII)	3.0E+06	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	48,000	NLV	NLV	NLV	NLV
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)	2.40E+05	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV	NLV
Ambient Air Finite VSI for 5 Meter Source Thickness	7.9E+06	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV	NLV
Ambient Air Finite VSI for 2 Meter Source Thickness	7.9E+06	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV	NLV
Ambient Air Particulate Soil Inhalation (Res PSI)	5.2E+06	ID	7.20E+05	3.30E+08	1.70E+06	2.60E+05	1.30E+07	1.30E+08	1.00E+08	2.00E+07	1.30E+07	1.30E+08	6.70E+06	ID
Direct Contact (Res DC)	{T}	5.0E+07 (DD)	7,600	3.70E+07	5.50E+05	2.50E+06	2.60E+06	2.00E+07	4.00E+05	1.60E+05	4.00E+07	2.60E+06	2.50E+06	1.70E+08
Nonresidential (µg/Kg)														
Drinking Water Protection (Nonres DWP)	NLL	1,000	4,600	1.30E+06	6,000	30,000	2,000	5.80E+06	7.00E+05	1,700	100,000	4,000	4,500	5.00E+06
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)	1.6E+07	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	89,000	NLV	NLV	NLV	NLV
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)	8.10E+05	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	NLV
Ambient Air Finite VSI for 5 Meter Source Thickness	2.8E+07	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	NLV
Ambient Air Finite VSI for 2 Meter Source Thickness	2.8E+07	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	NLV
Ambient Air Particulate Soil Inhalation (Nonres PSI)	6.5E+06	ID	9.10E+05	1.50E+08	2.20E+06	2.40E+05	5.90E+06	5.90E+07	4.40E+07	8.80E+06	1.60E+07	5.90E+07	2.90E+06	ID
Direct Contact (Nonres DC)	{T}	3.7E+08 (DD)	37,000	1.30E+08	2.10E+06	9.20E+06	9.00E+06	7.30E+07	9.0E+5 (DD)	5.80E+05	1.50E+08	9.60E+06	9.00E+06	6.30E+08
Screening Levels (µg/Kg)														
Soil Saturation Concentration Screening Levels (Csat)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Applicable Criterion/RBSL Exceeded

Soil boring was advanced on west-adjoining property identified as 400 East Ten Mile Road, Pleasant Ridge, MI 48069

BOLD Value Exceeds Applicable Criterion/RBSL

bgs Below Ground Surface (feet)

MDL Laboratory Method Detection Limit

NA Not Applicable

NLL Not Likely to Leach

{G} Metal GSIP Criteria for Surface Water Not Protected for Drinking Water Use based on 269 mg/L CaCO3 Hardness: Station ID 500011, Red Run, near Warren, MI.

{T} Refer to the Toxic Substance Control Act (TSCA), 40 CFR 761, Subparts D and G, as amended, to determine the applicability of TSCA cleanup standards. Alternatives to compliance with the standards listed below are possible under Subpart D. New Releases may be subject to the standards identified in Subpart G. Use Part 201 soil direct contact criteria in the table below where TSCA standards are not applicable.

LAND USE CATEGORY	TSCA, Subpart D	Part 201
Residential	1,000 µg/Kg, or	4,000 µg/Kg
Nonresidential	10,000 µg/Kg if capped	16,000 µg/Kg

TABLE 3
ASTI MARCH 1995 AND INTEGRATED JULY 1995
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
VOCs, PNAs, AND MICHIGAN TEN METALS
404 EAST 10 MILE ROAD, PLEASANT RIDGE, MICHIGAN
PM PROJECT # 01-5706-1-0002

VOLATILE ORGANIC COMPOUNDS (VOCs), POLYNUCLEAR AROMATIC COMPOUNDS (PNAs), AND MICHIGAN TEN METALS (µg/L)			Benzene	1,1-Dichloroethane	1,2-Dichloroethane	Ethylbenzene	Toluene	1,1,1-Trichloroethane	Trichloroethene	Xylenes	Other VOCs	PNAs	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc
Chemical Abstract Service Number (CAS#)			71432	75343	107062	100414	108883	71556	79016	1330207	Various	Various	7440382	7440393	7440439	16065831	7440508	7439921	7439976	7782492	7440224	7440666
Sample ID	**Sample Date**	**Screen Depth (feet bgs)**	**VOCs**									**PNAs**	**Michigan Ten Metals**									
ASTI March 1995																						
MW-1	3/13/1995	7.00-12.00	13	<1	<1	16	1,200	9	<1	85	<MDL	<MDL	<500	90	<50	<50	<50	<50	<2	<500	<50	140
MW-2	3/15/1995	5.00-10.00	<1	<1	<1	<1	<1	29	<1	<3	<MDL	<MDL	<500	<50	<50	<50	<50	<50	<2	<500	<50	70
MW-3	3/14/1995	5.00-10.00	<1	<1	<1	<1	<1	10	<1	<3	<MDL	<MDL	<500	<50	<50	<50	<50	<50	<2	<500	<50	<50
IE August 1995																						
MW-1R	July 1995	7.00-12.00	<1	5	<1	12	2,500	<1	<1	62	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	7/25/1995	7.00-12.00	<1	<1	<1	<1	<1	42	<1	<1	<MDL	NA	7	<200	<0.2	<50	<20	<3	<0.2	<5	<0.5	60
MW-5	7/25/1995	2.00-7.00	<1	35	<1	<1	<1	8	<1	<1	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	7/25/1995	2.50-7.50	<1	6	<1	<1	<1	31	<1	<1	<MDL	NA	7	400	0.6	<50	40	5	<0.2	<5	<0.5	580
MW-8	7/26/1995	0.00-1.50	<1	6	<1	<1	<1	43	<1	<1	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-9	7/26/1995	5.00-10.00	<1	8	9	<1	<1	39	15	<1	<MDL	NA	7	<200	<0.2	<50	20	<3	<0.2	<5	<0.5	100
MW-10	7/27/1995	5.00-10.00	<1	<1	<1	<1	<1	<1	<1	<1	<MDL	NA	9	<200	<0.2	<50	<20	<3	<0.2	<5	<0.5	50
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) **Generic Groundwater Cleanup Criteria Table 1: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013** **MDEQ Guidance Document For The Vapor Intrusion Pathway, Policy and Procedure Number: 09-017, Appendix D Vapor Intrusion Screening Values, May 2013**																						
Residential/Nonresidential (µg/L)																						
Residential Drinking Water (Res DW)			5.0 {A}	880	5.0 {A}	74 {E}	790 {E}	200 {A}	5.0 {A}	280 {E}	Various	Various	10 {A}	2,000 {A}	5.0 {A}	100 {A}	1,000 {E}	4.0 {L}	2.0 {A}	50 {A}	34	2,400
Nonresidential Drinking Water (Nonres DW)			5.0 {A}	2,500	5.0 {A}	74 {E}	790 {E}	200 {A}	5.0 {A}	280 {E}	Various	Various	10 {A}	2,000 {A}	5.0 {A}	100 {A}	1,000 {E}	4.0 {L}	2.0 {A}	50 {A}	98	5,000 {E}
Groundwater Surface Water Interface (GSI)			200 {X}	740	360 {X}	18	270	89	200 {X}	41	Various	Various	10	1,300 {G}	4.6 {G,X}	11	21 {G}	30 {G,X}	0.0013	5.0	0.2 {M}; 0.06	270 {G}
Residential Groundwater Volatilization to Indoor Air Inhalation (Res GVII) [2]			5,600	1.00E+06	9,600	1.10E+05	5.3E+5 {S}	6.60E+05	2,200	1.9E+5 {S}	Various	Various	NLV	NLV	NLV	NLV	NLV	NLV	56 {S}	NLV	NLV	NLV
Nonresidential Groundwater Volatilizationto Indoor Air Inhalation (Nonres GVII) [2]			35,000	2.30E+06	59,000	1.7E+5 {S}	5.3E+5 {S}	1.3E+6 {S}	4,900	1.9E+5 {S}	Various	Various	NLV	NLV	NLV	NLV	NLV	NLV	56 {S}	NLV	NLV	NLV
Screening Levels (µg/L)																						
Residential Groundwater Vapor Intrusion Screening Levels (GW_{VI-res}) [3]			27	4,300	41	700	36,000	17,000	9.8	10,000	Various	Various	NL	NL	NL	NL	NL	NL	ID	NL	NL	NL
Nonresidential Groundwater Vapor Intrusion Screening Levels (GW_{VI-nr})[3]			140	18,000	210	2600	1.50E+05	71000	41	10,000	Various	Various	NL	NL	NL	NL	NL	NL	ID	NL	NL	NL
Water Solubility			1.75E+06	5.06E+06	8.52E+06	1.69E+05	5.26E+05	1.33E+06	1.10E+06	1.86E+05	Various	Various	NA	NA	NA	NA	NA	NA	56	NA	NA	NA
Flammability and Explosivity Screening Level			68,000	3.80E+05	2.50E+06	43,000	61,000	ID	ID	70,000	Various	Various	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID

Applicable Criteria/RBSL Exceeded

Temporary monitoring well was installed on west-adjoining property identified as 400 East Ten Mile Road, Pleasant Ridge, MI 48069

BOLD Value Exceeds Applicable Criteria

bgs Below Ground Surface (feet)

MDL Laboratory Method Detection Limit

[1] Rule 323.1057 of Part 4 Water Quality Standards

[2] Tier 1 GVII Criteria based on 3 meter (or greater) groundwater depth

[3] (2013 Vapor Intrusion Guidance) Screening Levels based on depth to groundwater less than 1.5 meters and not in contact with building foundation

[4] (2013 Vapor Intrusion Guidance) Screening levels based on groundwater in contact with the building foundation or within a sump

[5] 1,2,3-Trimethylbenzene RBSLs based on the more restrictive of 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.

NA/NL/ID Not Applicable/Not Listed/Insufficient Data

NLL/NLV Not Likely to Leach/Not Likely to Volatilize

{G} Metal GSIP Criteria for Surface Water Not Protected for Drinking Water Use based on 269 mg/L CaCO3 Hardness: Station ID 500011, Red Run, near Warren, MI.

TABLE 4
PM JULY 2015
SUMMARY OF SOIL ANALYTICAL RESULTS
VOCs AND PNAs
404 EAST 10 MILE ROAD, PLEASANT RIDGE, MICHIGAN
PM PROJECT # 01-5706-1-0002

VOLATILE ORGANIC COMPOUNDS (VOCs) AND POLYNUCLEAR AROMATIC HYDROCARBONS (PNAs) (µg/Kg)			1,4-Dichlorobenzene	1,1-Dichloroethane	1,2-Dichloropropane	2-Methylnaphthalene	Naphthalene	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,2,3-Trimethylbenzene[1]	1,2,4-Trimethylbenzene	Xylenes	Other VOCs	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Chrysene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Other PNAs
Chemical Abstract Service Number (CAS#)			106467	75343	78875	91576	91203	127184	108883	71556	79016	526738	95636	1330207	Various	56553	50328	205992	218019	206440	193395	85018	129000	Various
Sample ID	**Sample Date**	**Sample Depth (feet bgs)**	**VOCs**													**PNAs**								
SB-1	7/2/2015	2.0-3.0	<50	<50	<50	<250	<250	<50	<50	390	68	<50	<50	<150	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-2	7/2/2015	2.0-3.0	<1,000	<1,000	<1,000	<5,000	<5,000	<1,000	<1,000	**79,000**	<1,000	<1,000	<1,000	<3,000	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-3	7/2/2015	2.0-3.0	<50	<50	<50	<250	<250	<50	<50	<50	<50	<50	<50	<150	<MDL	<330	340	440	340	740	<330	<330	590	<MDL
SB-4	7/2/2015	4.0-5.0	<50	<50	<50	<250	<250	<50	<50	<50	<50	<50	<50	<150	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-5	7/2/2015	4.0-5.0	<50	<50	<50	<250	<250	<50	<50	<50	<50	<50	<50	<150	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-5	7/2/2015	9.0-10.0	<50	<50	<50	<250	<250	<50	<50	<50	<50	<50	<50	<150	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-6	7/2/2015	1.0-2.0	<250	<250	<250	<1,250	<1,250	<250	440	**8,100**	<250	<250	<250	<750	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-6	7/2/2015	4.0-5.0	<50	<50	<50	<250	<250	<50	<50	<50	<50	<50	<50	<150	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-7	7/2/2015	2.0-3.0	<50	<50	<50	<250	<250	<50	<50	<50	<50	<50	<50	<150	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-8	7/2/2015	1.0-2.0	<50	<50	<50	<250	<250	<50	<50	<50	<50	<50	<50	<150	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-9	7/2/2015	2.0-3.0	<50	<50	<50	<250	<250	<50	<50	<50	<50	<50	<50	<150	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-10	7/2/2015	2.0-3.0	<50	<50	<50	<250	<250	<50	<50	<50	<50	<50	<50	<150	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-11	7/2/2015	1.0-2.0	<50	<50	<50	<250	<250	<50	<50	<50	<50	<50	<50	<150	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-12	7/2/2015	4.0-5.0	<50	110	<50	<250	<250	63	<50	340	<50	<50	<50	<150	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-13	7/2/2015	1.0-2.0	210	2,300	80	<250	<250	76	<50	900	<50	<50	<50	<150	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-13	7/2/2015	4.0-5.0	<50	<50	<50	<250	<250	<50	<50	260	<50	<50	<50	<150	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-14	7/2/2015	5.0-6.0	<50	<50	<50	420	280	<50	190	430	<50	120	120	460	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
SB-15	7/2/2015	1.0-2.0	<50	<50	<50	<250	<250	<50	<50	<50	<50	<50	<50	<150	<MDL	440	420	520	500	680	380	460	620	<MDL
SB-16	7/2/2015	2.0-3.0	<50	<50	<50	<250	<250	<50	61	**3,000**	<50	<50	59	190	<MDL	<330	<330	<330	<330	<330	<330	<330	<330	<MDL
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) **Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013** **MDEQ Guidance Document For The Vapor Intrusion Pathway, Policy and Procedure Number: 09-017, Appendix D Vapor Intrusion Screening Values, May 2013**																								
Residential (µg/Kg)																								
Statewide Default Background Levels			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Drinking Water Protection (Res DWP)			1,700	18,000	100	57,000	35,000	100	16,000	4,000	100	1,800	2,100	5,600	Various	NLL	NLL	NLL	NLL	7.30E+05	NLL	56,000	4.80E+05	Various
Groundwater Surface Water Interface Protection (GSIP)			360	15,000	4,600 {X}	4,200	730	1,200 {X}	5,400	1,800	4,000 {X}	570	570	820	Various	NLL	NLL	NLL	NLL	5,500	NLL	2,100	ID	Various
Soil Volatilization to Indoor Air Inhalation (Res SVII)			19,000	2.30E+05	4,000	2.70E+06	2.50E+05	11,000	3.3E+05 {C}	2.50E+05	1,000	2.6E+06 {C}	4.3E+06 {C}	6.3E+06 {C}	Various	NLV	NLV	ID	ID	1.0E+9 {D}	NLV	2.8E+06	1.0E+9 {D}	Various
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)			77,000	2.10E+06	25,000	1.50E+06	3.00E+05	1.70E+05	2.80E+06	3.80E+06	11,000	1.60E+07	2.10E+07	4.60E+07	Various	NLV	NLV	ID	ID	7.40E+08	NLV	1.60E+05	6.5E+08	Various
Ambient Air Finite VSI for 5 Meter Source Thickness			77,000	5.90E+06	50,000	1.50E+06	3.00E+05	4.80E+05	5.10E+06	1.20E+07	25,000	3.80E+08	5.00E+08	6.10E+07	Various	NLV	NLV	ID	ID	7.4E+08	NLV	1.60E+05	6.5E+08	Various
Ambient Air Finite VSI for 2 Meter Source Thickness			1.10E+05	1.40E+07	1.10E+05	1.50E+06	3.00E+05	1.1E+06	1.20E+07	2.80E+07	57,000	3.80E+08	5.00E+08	1.30E+08	Various	NLV	NLV	ID	ID	7.4E+08	NLV	1.60E+05	6.5E+08	Various
Ambient Air Particulate Soil Inhalation (Res PSI)			4.50E+08	3.30E+10	2.70E+08	6.70E+08	2.00E+08	2.7E+09	2.70E+10	6.70E+10	1.30E+08	8.20E+10	8.20E+10	2.90E+11	Various	ID	1.5E+06	ID	ID	9.3E+09	ID	6.7E+06	6.7E+09	Various
Direct Contact (Res DC)			4.00E+05	2.7E+07 {C}	1.40E+05	8.10E+06	1.60E+07	2.0E+05 {C}	5.0E+07 {C}	5.0E+08 {C}	5.0E+5 {C,DD}	3.2E+07 {C}	3.2E+07 {C}	4.1E+08 {C}	Various	20,000	2,000	20,000	2.0E+06	4.6E+07	20,000	1.6E+06	2.9E+07	Various
Nonresidential (µg/Kg)																								
Drinking Water Protection (Nonres DWP)			1,700	50,000	100	1.70E+05	1.00E+05	100	16,000	4,000	100	1,800	2,100	5,600	Various	NLL	NLL	NLL	NLL	7.30E+05	NLL	1.60E+05	4.80E+05	Various
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)			1.00E+05	4.30E+05	7,400	4.90E+06	4.70E+05	21,000	6.1E+05 {C}	4.60E+05	1,900	4.8E+06 {C}	8.0E+06 {C}	1.2E+07 {C}	Various	NLV	NLV	ID	ID	1.0E+9 {D}	NLV	5.1E+06	1.0E+9 {D}	Various
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)			2.60E+05	2.50E+06	30,000	1.80E+06	3.50E+05	2.10E+05	3.30E+06	4.50E+06	14,000	1.90E+07	2.50E+07	5.40E+07	Various	NLV	NLV	ID	ID	8.9E+08	NLV	1.90E+05	7.8E+08	Various
Ambient Air Finite VSI for 5 Meter Source Thickness			2.60E+05	6.00E+06	51,000	1.80E+06	3.50E+05	4.90E+05	3.60E+07	1.50E+07	25,000	4.60E+08	6.00E+08	6.50E+07	Various	NLV	NLV	ID	ID	8.8E+08	NLV	1.90E+05	7.8E+08	Various
Ambient Air Finite VSI for 2 Meter Source Thickness			3.40E+05	1.40E+07	1.20E+05	1.80E+06	3.50E+05	1.1E+06	3.60E+07	3.10E+07	58,000	4.60E+08	6.00E+08	1.30E+08	Various	NLV	NLV	ID	ID	8.8E+08	NLV	1.90E+05	7.8E+08	Various
Ambient Air Particulate Soil Inhalation (Nonres PSI)			5.70E+08	1.50E+10	1.20E+08	2.90E+08	8.80E+07	1.2E+09	1.20E+10	2.90E+10	5.90E+07	3.60E+10	3.60E+10	1.30E+11	Various	ID	1.9E+06	ID	ID	4.1E+09	ID	2.9E+06	2.9E+09	Various
Direct Contact (Nonres DC)			1.90E+06	8.7E+07 {C}	6.6E+05 {C}	2.60E+07	5.20E+07	9.3E+05 {C}	1.6E+08 {C}	1.0E+09 {C}	6.6E+05 {C,DD}	1.0E+08 {C}	1.0E+08 {C}	1.0E+09 {C}	Various	80,000	8,000	80,000	8.0E+06	1.3E+08	80,000	5.2E+06	8.4E+07	Various
Screening Levels (µg/Kg)																								
Soil Saturation Concentration Screening Levels (Csat)			NA	8.90E+05	5.50E+05	NA	NA	88,000	2.50E+05	4.60E+05	5.00E+05	94,000	1.10E+05	1.50E+05	Various	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Applicable Criterion/RBSL Exceeded
BOLD Value Exceeds Applicable Criterion/RBSL
bgs Below Ground Surface (feet)
1 1,2,3-Trimethylbenzene RBSLs based on the more restrictive of 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.
MDL Laboratory Method Detection Limit
NA/NL/ID Not Applicable/Not Listed/Insufficient Data
NLL/NLV Not Likely to Leach/Not Likely to Volatilize

TABLE 5
PM JULY 2015
SUMMARY OF SOIL ANALYTICAL RESULTS
PCBs AND MICHIGAN TEN METALS
404 EAST 10 MILE ROAD, PLEASANT RIDGE, MICHIGAN
PM PROJECT # 01-5706-1-0002

POLYCHLORINATED BIPHENYLS (PCBs) AND MICHIGAN TEN METALS (µg/Kg)			PCBs	Arsenic	Barium	Cadmium	Chromium	Copper	Lead[1]	Mercury	Selenium	Silver	Zinc
Chemical Abstract Service Number (CAS#)			1336363	7440382	7440393	7440439	16065831	7440508	7439921	7439976	7782492	7440224	7440666
Sample ID	**Sample Date**	**Sample Depth (feet bgs)**	**PCBs**	**Michigan Ten Metals**									
SB-1	7/2/2015	2.0-3.0	**11,000,000**	1,300	9,900	100	5,700	1,100	3,200	<50	350	<100	14,000
SB-2	7/2/2015	2.0-3.0	**5,400**	**9,500**	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-3	7/2/2015	2.0-3.0	**23,000**	5,500	27,000	370	15,000	12,000	43,000	<50	1,500	<100	56,000
SB-4	7/2/2015	4.0-5.0	<330	2,600	6,800	160	9,200	3,100	2,000	<50	<200	<100	7,100
SB-5	7/2/2015	4.0-5.0	<330	7,400	47,000	420	15,000	14,000	8,300	<50	<200	<100	36,000
SB-5	7/2/2015	9.0-10.0	<330	6,800	50,000	480	15,000	14,000	6,200	<50	330	<100	38,000
SB-6	7/2/2015	1.0-2.0	**880,000**	4,000	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-6	7/2/2015	4.0-5.0	<330	1,200	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-7	7/2/2015	2.0-3.0	<330	**9,200**	56,000	470	15,000	14,000	7,700	<50	<200	<100	40,000
SB-8	7/2/2015	1.0-2.0	<330	2,500	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-9	7/2/2015	2.0-3.0	<330	6,300	48,000	430	16,000	21,000	6,600	<50	<200	<100	37,000
SB-10	7/2/2015	2.0-3.0	<330	1,100	11,000	180	6,200	3,700	2,500	<50	<200	<100	12,000
SB-11	7/2/2015	1.0-2.0	<330	**9,400**	140,000	390	9,300	7,900	6,500	<50	300	<100	28,000
SB-12	7/2/2015	4.0-5.0	<330	5,500	39,000	400	11,000	12,000	7,600	<50	<200	<100	31,000
SB-13	7/2/2015	1.0-2.0	<330	4,600	39,000	410	15,000	16,000	6,500	<50	<200	<100	40,000
SB-13	7/2/2015	4.0-5.0	<330	4,900	71,000	630	23,000	<1,000	9,100	<50	750	100	52,000
SB-14	7/2/2015	5.0-6.0	430	**25,000**	17,000	300	5,100	4,900	1,800	<50	<200	<100	9,400
SB-15	7/2/2015	1.0-2.0	<330	4,100	74,000	580	7,000	12,000	**650,000**	<50	1,100	<100	130,000
SB-16	7/2/2015	2.0-3.0	<330	2,100	11,000	210	7,200	<1,000	4,000	<50	<200	<100	7,700
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) **Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013** **MDEQ Guidance Document For The Vapor Intrusion Pathway, Policy and Procedure Number: 09-017, Appendix D Vapor Intrusion Screening Values, May 2013**													
Residential (µg/Kg)													
Statewide Default Background Levels			NA	5,800	75,000	1,200	18,000	32,000	21,000	130	410	1,000	47,000
Drinking Water Protection (Res DWP)			NLL	4,600	1.30E+06	6,000	30,000	5.80E+06	7.00E+05	1,700	4,000	4,500	2.40E+06
Groundwater Surface Water Interface Protection (GSIP)			NLL	4,600	8.2E+05 {G}	5,600 {G,X}	3,300	1.2E+05 {G}	5.2E+06 {G,X}	50 {M}; 1.2	400	100 {M}; 27	2.7E+05 {G}
Soil Volatilization to Indoor Air Inhalation (Res SVII)			3.0E+06	NLV	NLV	NLV	NLV	NLV	NLV	48,000	NLV	NLV	NLV
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)			2.40E+05	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV
Ambient Air Finite VSI for 5 Meter Source Thickness			7.9E+06	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV
Ambient Air Finite VSI for 2 Meter Source Thickness			7.9E+06	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV
Ambient Air Particulate Soil Inhalation (Res PSI)			5.2E+06	7.20E+05	3.30E+08	1.70E+06	2.60E+05	1.30E+08	1.0E+08	2.00E+07	1.30E+08	6.70E+06	ID
Direct Contact (Res DC)			{T}	7,600	3.70E+07	5.50E+05	2.50E+06	2.00E+07	4.00E+05	1.60E+05	2.60E+06	2.50E+06	1.70E+08
Nonresidential (µg/Kg)													
Drinking Water Protection (Nonres DWP)			NLL	4,600	1.30E+06	6,000	30,000	5.80E+06	7.00E+05	1,700	4,000	4,500	5.00E+06
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)			1.6E+07	NLV	NLV	NLV	NLV	NLV	NLV	89,000	NLV	NLV	NLV
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)			8.10E+05	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV
Ambient Air Finite VSI for 5 Meter Source Thickness			2.8E+07	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV
Ambient Air Finite VSI for 2 Meter Source Thickness			2.8E+07	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV
Ambient Air Particulate Soil Inhalation (Nonres PSI)			6.5E+06	9.10E+05	1.50E+08	2.20E+06	2.40E+05	5.90E+07	4.4E+07	8.80E+06	5.90E+07	2.90E+06	ID
Direct Contact (Nonres DC)			{T}	37,000	1.30E+08	2.10E+06	9.20E+06	7.30E+07	9.0E+5 (DD)	5.80E+05	9.60E+06	9.00E+06	6.30E+08
Screening Levels (µg/Kg)													
Soil Saturation Concentration Screening Levels (Csat)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Applicable Criterion/RBSL Exceeded
BOLD Value Exceeds Applicable Criterion/RBSL
bgs Below Ground Surface (feet)
MDL Laboratory Method Detection Limit
NA/NL/ID Not Applicable/Not Listed/Insufficient Data
NLL/NLV Not Likely to Leach/Not Likely to Volatilize
[1] Maximum of analyzed or calculated total lead value.
{G} Metal GSIP Criteria for Surface Water Not Protected for Drinking Water Use based on 269 mg/L CaCO3 Hardness: Station ID 500011, Red Run, near Warren, MI.
{T} Refer to the Toxic Substance Control Act (TSCA), 40 CFR 761, Subparts D and G, as amended, to determine the applicability of TSCA cleanup standards. Alternatives to compliance with the standards listed below are possible under Subpart D. New Releases may be subject to the standards identified in Subpart G. Use Part 201 soil direct contact criteria in the table below where TSCA standards are not applicable.

LAND USE CATEGORY	TSCA, Subpart D	Part 201
Residential	1,000 µg/Kg, or 10,000 µg/Kg if capped	4,000 µg/Kg
Nonresidential		16,000 µg/Kg

TABLE 6
PM JULY 2015
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
VOCs, PNAs, AND MICHIGAN TEN METALS
404 EAST 10 MILE ROAD, PLEASANT RIDGE, MICHIGAN
PM PROJECT # 01-5706-1-0002

VOLATILE ORGANIC COMPOUNDS (VOCs), POLYNUCLEAR AROMATIC COMPOUNDS (PNAs), AND MICHIGAN TEN METALS (µg/L)				1,1-Dichloroethane	1,1,1-Trichloroethane	Other VOCs	PNAs	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc
Chemical Abstract Service Number (CAS#)				75343	71556	Various	Various	7440382	7440393	7440439	16065831	7440508	7439921	7439976	7782492	7440224	7440666
Sample ID	**Sample Date**	**Screen Depth (feet bgs)**	**Depth to Groundwater (feet bgs)**	**VOCs**			**PNAs**	**Michigan Ten Metals**									
TMW-1	07/02/15	5.55-10.55	9.45	<1	7	<1	<MDL	<1	<100	0.2	<5	<4	<3	<0.2	<5	0.2	<10
TMW-4	07/02/15	9.55-14.55	10.75	3	10	<1	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-6	07/02/15	8.50-13.50	9.61	<1	7	<1	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-15	07/02/15	5.90-10.90	7.70	<1	24	<1	<MDL	<1	<100	<0.2	<5	<4	<3	<0.2	<5	<0.2	<10
TMW-16	07/02/15	8.50-13.50	8.98	<1	<1	<1	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) **Generic Groundwater Cleanup Criteria Table 1: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013** **MDEQ Guidance Document For The Vapor Intrusion Pathway, Policy and Procedure Number: 09-017, Appendix D Vapor Intrusion Screening Values, May 2013**																	
Residential/Nonresidential (µg/L)																	
Residential Drinking Water (Res DW)				880	200 {A}	Various	Various	10 {A}	2,000 {A}	5.0 {A}	100 {A}	1,000 {E}	4.0 {L}	2.0 {A}	50 {A}	34	2,400
Nonresidential Drinking Water (Nonres DW)				2,500	200 {A}	Various	Various	10 {A}	2,000 {A}	5.0 {A}	100 {A}	1,000 {E}	4.0 {L}	2.0 {A}	50 {A}	98	5,000 {E}
Groundwater Surface Water Interface (GSI)				740	89	Various	Various	10	{G}	{G,X}	11	{G}	{G,X}	0.0013	5.0	0.2 {M}; 0.06	{G}
Residential Groundwater Volatilization to Indoor Air Inhalation (Res GVII) [2]				1.00E+06	6.60E+05	Various	Various	NLV	NLV	NLV	NLV	NLV	NLV	56 {S}	NLV	NLV	NLV
Nonresidential Groundwater Volatilizationto Indoor Air Inhalation (Nonres GVII) [2]				2.30E+06	1.3E+6 {S}	Various	Various	NLV	NLV	NLV	NLV	NLV	NLV	56 {S}	NLV	NLV	NLV
Screening Levels (µg/L)																	
Residential Groundwater Vapor Intrusion Screening Levels ($GW_{VI\text{-}res}$) [3]				4,300	17,000	Various	Various	NL	NL	NL	NL	NL	NL	ID	NL	NL	NL
Nonresidential Groundwater Vapor Intrusion Screening Levels ($GW_{VI\text{-}nr}$)[3]				18,000	71000	Various	Various	NL	NL	NL	NL	NL	NL	ID	NL	NL	NL
Water Solubility				5.06E+06	1.33E+06	Various	Various	NA	NA	NA	NA	NA	NA	56	NA	NA	NA
Flammability and Explosivity Screening Level				3.80E+05	ID	Various	Various	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID

	Applicable Criteria/RBSL Exceeded
BOLD	Value Exceeds Applicable Criteria
bgs	Below Ground Surface (feet)
MDL	Laboratory Method Detection Limit
[1]	Rule 323.1057 of Part 4 Water Quality Standards
[2]	Tier 1 GVII Criteria based on 3 meter (or greater) groundwater depth
[3]	(2013 Vapor Intrusion Guidance) Screening Levels based on depth to groundwater less than 1.5 meters and not in contact with building foundation
[4]	(2013 Vapor Intrusion Guidance) Screening levels based on groundwater in contact with the building foundation or within a sump
NA/NL/ID	Not Applicable/Not Listed/Insufficient Data
NLV	Not Likely to Volatilize
{G}	Metal GSIP Criteria for Surface Water Not Protected for Drinking Water Use based on 269 mg/L CaCO3 Hardness: Station ID 500011, Red Run, near Warren, MI.

TABLE 7 (1 OF 2)
PM 2015 AND 2016
SUMMARY OF SOIL ANALYTICAL RESULTS
PCBs
404 EAST 10 MILE ROAD, PLEASANT RIDGE, MICHIGAN
PM PROJECT # 01-5706-1-0002

POLYCHLORINATED BIPHENYLS (PCBs) (µg/Kg)			PCBs
Chemical Abstract Service Number (CAS#)			1336363
Sample ID	**Sample Date**	**Sample Depth (feet bgs)**	**PCBs**
SB-1	7/2/2015	2.0-3.0	**11,000,000**
SB-1R	11/24/2015	5.0-6.0	**7,400**
SB-1R	11/24/2015	8.5-9.5	**247,000**
SB-2	7/2/2015	2.0-3.0	**5,400**
SB-3	7/2/2015	2.0-3.0	**23,000**
SB-3R	8/31/2015	8.5-9.5	<330
SB-4	7/2/2015	4.0-5.0	<330
SB-5	7/2/2015	4.0-5.0	<330
SB-5	7/2/2015	9.0-10.0	<330
SB-6	7/2/2015	1.0-2.0	**880,000**
SB-6	7/2/2015	4.0-5.0	<330
SB-7	7/2/2015	2.0-3.0	<330
SB-8	7/2/2015	1.0-2.0	<330
SB-9	7/2/2015	2.0-3.0	<330
SB-10	7/2/2015	2.0-3.0	<330
SB-11	7/2/2015	1.0-2.0	<330
SB-12	7/2/2015	4.0-5.0	<330
SB-13	7/2/2015	1.0-2.0	<330
SB-13	7/2/2015	4.0-5.0	<330
SB-14	7/2/2015	5.0-6.0	430
SB-15	7/2/2015	1.0-2.0	<330
SB-16	7/2/2015	2.0-3.0	<330
SB-17	8/31/2015	2.0-3.0	<330
SB-17	8/31/2015	9.0-10.0	<330
SB-18	8/31/2015	1.0-2.0	**44,000**
SB-18	8/31/2015	2.0-3.0	**16,000**
SB-18	8/31/2015	7.5-8.5	<330
SB-19	8/31/2015	1.0-2.0	**20,000**
SB-19	8/31/2015	2.0-3.0	**24,000**
SB-19	8/31/2015	4.5-5.5	**10,000**
SB-19	8/31/2015	6.5-7.5	<330
SB-20	8/31/2015	1.0-2.0	**16,000**
SB-20	8/31/2015	2.0-3.0	**43,000**
SB-20	8/31/2015	7.0-8.0	<330
SB-21	8/31/2015	2.0-3.0	<330
SB-22	8/31/2015	2.0-3.0	**6,000**
SB-22	8/31/2015	8.0-9.0	<330
SB-23	8/31/2015	2.0-3.0	<330
SB-23	8/31/2015	9.0-10.0	<330
SB-24	8/31/2015	1.0-2.0	**6,188,000**
SB-24	8/31/2015	8.0-9.0	<330
SB-25	8/31/2015	1.0-2.0	**7,000**
SB-25	8/31/2015	2.0-3.0	**19,000**
SB-25	8/31/2015	9.0-10.0	**1,200**
SB-26	8/31/2015	2.0-3.0	**2,300**
SB-26	8/31/2015	9.0-10.0	<330
SB-27	8/31/2015	1.0-2.0	**15,000**
SB-27	8/31/2015	2.0-3.0	**12,000**
SB-27	8/31/2015	5.0-6.0	**9,000**
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013			
Residential (µg/Kg)			
Drinking Water Protection (Res DWP)			NLL
Groundwater Surface Water Interface Protection (GSIP)			NLL
Soil Volatilization to Indoor Air Inhalation (Res SVII)			3.0E+06
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)			2.40E+05
Ambient Air Finite VSI for 5 Meter Source Thickness			7.9E+06
Ambient Air Finite VSI for 2 Meter Source Thickness			7.9E+06
Ambient Air Particulate Soil Inhalation (Res PSI)			5.2E+06
Direct Contact (Res DC)			{T}
Nonresidential (µg/Kg)			
Drinking Water Protection (Nonres DWP)			NLL
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)			1.6E+07
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)			8.10E+05
Ambient Air Finite VSI for 5 Meter Source Thickness			2.8E+07
Ambient Air Finite VSI for 2 Meter Source Thickness			2.8E+07
Ambient Air Particulate Soil Inhalation (Nonres PSI)			6.5E+06
Direct Contact (Nonres DC)			{T}
Screening Levels (µg/Kg)			
Soil Saturation Concentration Screening Levels (Csat)			NA

	Applicable Criterion/RBSL Exceeded
BOLD	Value Exceeds Applicable Criterion/RBSL
bgs	Below Ground Surface (feet)
NA/NL/ID	Not Applicable/Not Listed/Insufficient Data
NLL/NLV	Not Likely to Leach/Not Likely to Volatilize
{T}	Refer to the Toxic Substance Control Act (TSCA), 40 CFR 761, Subparts D and G, as amended, to determine the applicability of TSCA cleanup standards. Alternatives to compliance with the standards listed below are possible under Subpart D. New Releases may be subject to the standards identified in Subpart G. Use Part 201 soil direct contact criteria in the table below where TSCA standards are not applicable.

LAND USE CATEGORY	TSCA, Subpart D	Part 201
Residential	1,000 µg/Kg, or 10,000 µg/Kg if capped	4,000 µg/Kg
Nonresidential		16,000 µg/Kg

TABLE 7 (2 OF 2)
PM 2015 AND 2016
SUMMARY OF SOIL ANALYTICAL RESULTS
PCBs
404 EAST 10 MILE ROAD, PLEASANT RIDGE, MICHIGAN
PM PROJECT # 01-5706-1-0002

POLYCHLORINATED BIPHENYLS (PCBs) **(µg/Kg)**			PCBs
Chemical Abstract Service Number (CAS#)			1336363
Sample ID	**Sample Date**	**Sample Depth (feet bgs)**	**PCBs**
SB-28	8/31/2015	1.0-2.0	**7,000**
SB-28	8/31/2015	2.0-3.0	**14,000**
SB-28	8/31/2015	7.0-8.0	<330
SB-29	8/31/2015	2.0-3.0	**10,000**
SB-29	8/31/2015	6.5-7.5	<330
SB-30	8/31/2015	2.0-3.0	<330
SB-30	8/31/2015	7.5-8.5	<330
SB-31	8/31/2015	2.0-3.0	**1,800**
SB-32	11/24/2015	2.0-3.0	**4,300**
SB-32	11/24/2015	3.5-4.5	<330
SB-33	8/31/2015	1.0-2.0	<330
SB-34	8/31/2015	2.0-3.0	<330
SB-34	8/31/2015	7.5-8.5	<330
SB-35	8/31/2015	2.0-3.0	<330
SB-35	8/31/2015	7.0-8.0	<330
SB-36	8/31/2015	2.0-3.0	300
SB-36	8/31/2015	7.0-8.0	250
SB-37	9/1/2015	2.0-3.0	**1,800**
SB-37	9/1/2015	8.0-9.0	<330
SB-38	11/24/2015	2.0-3.0	**170,000**
SB-38	11/24/2015	5.0-6.0	<330
SB-39	11/24/2015	2.0-3.0	**10,800,000**
SB-39	11/24/2015	5.0-6.0	**4,900**
SB-40	11/24/2015	2.0-3.0	<330
SB-40	11/24/2015	5.0-6.0	<330
SB-40	11/24/2015	8.5-9.5	**2,015,000**
SB-41	11/24/2015	2.0-3.0	<330
SB-41	11/24/2015	5.0-6.0	<330
SB-41	11/24/2015	8.0-9.0	<330
SB-42	11/24/2015	2.0-3.0	<330
SB-43	11/24/2015	1.0-2.0	600
SB-43	11/24/2015	2.0-3.0	<330
SB-43	11/24/2015	5.0-6.0	<330
SB-44	11/24/2015	1.0-2.0	700
SB-44	11/24/2015	2.0-3.0	<330
SB-45	11/24/2015	2.0-3.0	<330
SB-46	11/24/2015	2.0-3.0	**11,000**
SB-46	11/24/2015	5.0-6.0	**9,000**
SB-47	11/24/2015	2.0-3.0	**21,000**
SB-47	11/24/2015	6.5-7.5	<330
SB-48	11/24/2015	2.0-3.0	<330
SB-49	11/24/2015	2.0-3.0	<330
SB-50	11/24/2015	0.5-1.5	**13,000**
SB-50	11/24/2015	4.0-5.0	<330
SB-51	11/24/2015	0.5-1.5	<330
SB-52	5/6/2016	1.0-2.0	**32,600**
SB-52	5/6/2016	2.0-3.0	940
SB-53	5/6/2016	1.0-2.0	**54,900**
SB-53	5/6/2016	2.0-3.0	**15,000**
SB-53	5/6/2016	5.0-6.0	<330
SB-54	5/6/2016	1.0-2.0	**1,180**
SB-54	5/6/2016	2.0-3.0	<330
SB-55	5/6/2016	1.0-2.0	440
SB-55	5/6/2016	2.0-3.0	<330
SB-55	5/6/2016	5.0-6.0	<330

Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50)
Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013

Residential (µg/Kg)	
Drinking Water Protection (Res DWP)	NLL
Groundwater Surface Water Interface Protection (GSIP)	NLL
Soil Volatilization to Indoor Air Inhalation (Res SVII)	3.0E+06
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)	2.40E+05
Ambient Air Finite VSI for 5 Meter Source Thickness	7.9E+06
Ambient Air Finite VSI for 2 Meter Source Thickness	7.9E+06
Ambient Air Particulate Soil Inhalation (Res PSI)	5.2E+06
Direct Contact (Res DC)	{T}
Nonresidential (µg/Kg)	
Drinking Water Protection (Nonres DWP)	NLL
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)	1.6E+07
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)	8.10E+05
Ambient Air Finite VSI for 5 Meter Source Thickness	2.8E+07
Ambient Air Finite VSI for 2 Meter Source Thickness	2.8E+07
Ambient Air Particulate Soil Inhalation (Nonres PSI)	6.5E+06
Direct Contact (Nonres DC)	{T}
Screening Levels (µg/Kg)	
Soil Saturation Concentration Screening Levels (Csat)	NA

	Applicable Criterion/RBSL Exceeded
BOLD	Value Exceeds Applicable Criterion/RBSL
bgs	Below Ground Surface (feet)
NA/NL/ID	Not Applicable/Not Listed/Insufficient Data
NLL/NLV	Not Likely to Leach/Not Likely to Volatilize
{T}	Refer to the Toxic Substance Control Act (TSCA), 40 CFR 761, Subparts D and G, as amended, to determine the applicability of TSCA cleanup standards. Alternatives to compliance with the standards listed below are possible under Subpart D. New Releases may be subject to the standards identified in Subpart G. Use Part 201 soil direct contact criteria in the table below where TSCA standards are not applicable.

LAND USE CATEGORY	TSCA, Subpart D	Part 201
Residential	1,000 µg/Kg, or 10,000 µg/Kg if capped	4,000 µg/Kg
Nonresidential		16,000 µg/Kg

Appendix D

PM ENVIRONMENTAL Environmental & Engineering Services

Iron Ridge Flat Plan

1" = 50'-0"

Area Square Footage Calculations

Long Market-	31,582 sq. ft.
Iron Row North Apartments-	27,647 sq. ft.
North Tech.-	24,443 sq. ft.
Fire Rover-	24,236 sq. ft.
South Tech.-	19,282 sq. ft.
Tower Office-	18,757 sq. ft.
Pulse Fitness-	15,454 sq. ft.
Detroit Air Compressor-	11,524 sq. ft.
Brew House-	9,789 sq. ft.
Beer Garden-	7,625 sq. ft.
Venue-	7,343 sq. ft.
North Anchor-	6,877 sq. ft.
NE Office-	4,983 sq. ft.
Transition-	4,857 sq. ft.
Personnel Building-	1,110 sq. ft.

Demo Square Footage Calculations

DEMO 1-	2,609 sq. ft.
DEMO 2-	7,111 sq. ft.
DEMO 3-	129 sq. ft.
DEMO4-	2,277 sq. ft.
TOTAL SQ. FT. =	12,126 sq. ft.

Total Parking Available On Site

PARKING AVAILABLE = 626 SPACES

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Client:

Iron Ridge Holdings, LLC
520 N Main
Royal Oak, MI 48067

Project:

Iron Ridge - Flat Plan

Issued	Description	By
12-28-2016	Flat Plan	EM

PRELIMINARY NOT FOR CONSTRUCTION

Seal:

Note:

Do not scale drawings. Use calculated dimensions only. Verify existing conditions in field.

North Arrow:

North

Sheet Title:

Iron Ridge Flat Plan

Project Number:

16-181

Sheet Number:

A.101

PM Project No. 01-07985-0
Location: Proposed Ironridge Campus,
Ferndale and Pleasant Ridge, Michigan

Photograph 1

Project Concept Overview Photo

Photograph 2

Proposed Apartment Complex

PM Project No. 01-07985-0
Location: Proposed Ironridge Campus,
Ferndale and Pleasant Ridge, Michigan

Photograph 3

Proposed Apartment Complex

Photograph 4

Proposed Campus (Brewery in front, apartments in back)

PM Project No. 01-07985-0
Location: Proposed Ironridge Campus,
Ferndale and Pleasant Ridge, Michigan

Photograph 5

Proposed Brewery (Exterior)

Photograph 6

Brewery Bar Area

PM Project No. 01-07985-0
Location: Proposed Ironridge Campus,
Ferndale and Pleasant Ridge, Michigan

Photograph 7

Brewery (Interior rendering)

Photograph 8

Proposed Office Building

Tables

PM ENVIRONMENTAL Environmental & Engineering Services

Table 1: Ironridge, Ferndale/Pleasant Ridge Eligible Activities Cost Estimates 4.5.17					
Item/Activity	**Total Request**	**MDEQ Act 381 Eligible Activities - Ferndale**	**MSF Act 381 Eligible Activities - Ferndale**	**MDEQ Act 381 Eligible Activities - Pleasant Ridge**	**MSF Act 381 Eligible Activities - Pleasant Ridge**
Baseline Environmental Assessments					
Phase I ESA	$ 7,000	$ 4,900		$ 2,100	
Phase II ESA/BEA/DDCC	$ 76,640	$ 32,305		$ 44,335	
Baseline Environmental Assessments Sub-Total	**$ 83,640**	**$ 37,205**	**$ -**	**$ 46,435**	**$ -**
Due Care Activities					
Vapor Barrier Design and Installation					
Design	$ 10,000	$ 5,000		$ 5,000	
Oversight	$ 36,000	$ 18,000		$ 18,000	
Vapor Evaluation, Reporting 4 Quarters	$ 150,000	$ 75,000		$ 75,000	
Western Building Installation (Proposed Fitness Center)	$ 67,500	$ -		$ 67,500	
Eastern Building Installation (Former Walker Wire)	$ 450,000	$ 135,000		$ 315,000	
Southern Building Installation (3155 Bermuda St)	$ 80,000	$ 80,000		$ -	
Contaminated Soil Removal, Transport and Disposal					
PCB Remediation Activities 404 10 Mile (5,720 Tons)	$ 991,000			$ 991,000	
PCB Remediation Activities Walker Wire Bldg (2100 Tons)	$ 357,000	$ 357,000		$ -	
Contaminated Soil Transport and Disposal associated with Development Activities (1500 Tons)	$ 163,000	$ 81,500		$ 81,500	
Groundwater Management	$ 107,750	$ 53,875		$ 53,875	
Oversight, Sampling and Reporting by Environmental Professional	$ 110,000	$ 55,000		$ 55,000	
Removal of USTs if encountered	$ 10,000	$ 5,000		$ 5,000	
Due Care Activities Sub-Total	**$ 2,532,250**	**$ 865,375**	**$ -**	**$ 1,666,875**	**$ -**
Demolition					
Predemolition Audit or Survey	$ 20,000		$ 10,000		$ 10,000
Building Demolition	$ 300,000		$ 150,000		$ 150,000
Dewatering During Foundation Removal	$ 20,000		$ 10,000		$ 10,000
Fill/Compaction/Rough Grading to Balance Site Where Building was Located	$ 10,000		$ 2,500		$ 7,500
Removal of Abandoned Utilities	$ 200,000		$ 100,000		$ 100,000
Removal of Parking Lots/Sidewalks/Curbs/Gutters	$ 200,000		$ 100,000		$ 100,000
Fill/Compaction/Rough Grading to Balance Site Where Site Improvements were Located	$ 100,000		$ 50,000		$ 50,000
Fees related to Demolition Engineering and Design	$ 70,000		$ 35,000		$ 35,000
Demolition Sub-Total	**$ 920,000**	**$ -**	**$ 457,500**	**$ -**	**$ 462,500**
Asbestos Activities					
Asbestos Survey	$ 20,000	$ 10,000		$ 10,000	
Asbestos Abatement, Oversight, Air Monitoring and Reporting	$ 100,000		$ 50,000		$ 50,000
Asbestos Activities Sub-Total	**$ 120,000**	**$ 10,000**	**$ 50,000**	**$ 10,000**	**$ 50,000**
Infrastructure Improvements					
Urban Storm water Management System	$ 250,000		$ 250,000		
Sidewalks	$ 100,000		$ 100,000		
Curbs and Gutters	$ 50,000		$ 50,000		
Roads	$ 250,000		$ 250,000		
Public Lighting	$ 100,000		$ 100,000		
Public Signage	$ 50,000		$ 50,000		
Storm Sewers	$ 100,000		$ 100,000		
Water Mains	$ 100,000		$ 100,000		
Sanitary Sewer Mains	$ 100,000		$ 100,000		
Landscaping	$ 150,000		$ 150,000		
Park/Seating Areas	$ 50,000		$ 50,000		
Professional Fees Directly Related to Infrastructure Improvements	$ 130,000		$ 130,000		
Infrastructure Sub-Total	**$ 1,430,000**	**$ -**	**$ 1,430,000**	**$ -**	**$ -**
Site Preparation					
Staking Related to Eligible Activities	$ 50,000		$ 50,000		
Geotechnical Engineering	$ 25,000		$ 25,000		
Clearing and Grubbing	$ 50,000		$ 50,000		
Temporary Construction Access and/or Roads	$ 5,000		$ 5,000		
Temporary Traffic Control	$ 25,000		$ 25,000		
Temporary Facility	$ 10,000		$ 10,000		
Temporary Erosion Control	$ 15,000		$ 15,000		
Temporary Site Control (fencing, gates, signage, lighting etc.)	$ 25,000		$ 25,000		
Excavation of Unstable Material	$ 25,000		$ 25,000		
Foundation Work to Address Special Soil Concerns	$ 100,000		$ 100,000		
Fill Relating to Other Eligible Activities	$ 25,000		$ 25,000		
Dewatering Relating to Other Eligible Activities	$ 25,000		$ 25,000		
Grading	$ 30,000		$ 30,000		
Relocation of Active Utilities (Electric, Gas, Water, Sewer)	$ 100,000		$ 100,000		
Unique Site Preparation Activities	$ 50,000		$ 50,000		
Professional Fees Directly Related to Site Preparation Activities	$ 50,000		$ 50,000		
Site Preparation Sub-Total	**$ 610,000**	**$ -**	**$ 610,000**	**$ -**	**$ -**
Preparation of Brownfield Plan and Act 381 Workplan					
Brownfield Plan	$ 25,000	$ 6,250	$ 6,250	$ 6,250	$ 6,250
Brownfield Plan and Act 381 Workplan Sub-Total	**$ 25,000**	**$ 6,250**	**$ 6,250**	**$ 6,250**	**$ 6,250**
Eligible Activities Sub-Total	**$ 5,720,890**	**$ 918,830**	**$ 2,553,750**	**$ 1,729,560**	**$ 518,750**
15% Contingency*	$ 841,838	$ 131,306	$ 382,125	$ 251,531	$ 76,875
Developer Eligible Reimbursement Total	**$ 6,562,728**	**$ 1,050,136**	**$ 2,935,875**	**$ 1,981,091**	**$ 595,625**

*15% Contingency excludes preparation of Brownfield Plan/381 Work Plan and Baseline Environmental Assessments

Tax Increment Financing Estimates:
Table 2

		2016	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Base Combined Taxable Value		$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820
Projected Taxable Value (estimated annual increase of 1%)			$ 1,221,700	$ 2,443,400	$ 2,467,834	$ 2,492,512	$ 2,517,437	$ 2,542,612	$ 2,568,038	$ 2,593,718	$ 2,619,656	$ 2,645,852
Incremental Difference (Projected Tax Value *minus* Existing Tax Value)			$ 569,880	$ 1,791,580	$ 1,816,014	$ 1,840,692	$ 1,865,617	$ 1,890,792	$ 1,916,218	$ 1,941,898	$ 1,967,836	$ 1,994,032
Local Taxes - Millage												
County Pk & Rec	0.2392	$ 156	$ 136	$ 429	$ 434	$ 440	$ 446	$ 452	$ 458	$ 465	$ 471	$ 477
HCMA	0.2146	$ 140	$ 122	$ 384	$ 390	$ 395	$ 400	$ 406	$ 411	$ 417	$ 422	$ 428
OCPTA	0.9941	$ 648	$ 567	$ 1,781	$ 1,805	$ 1,830	$ 1,855	$ 1,880	$ 1,905	$ 1,930	$ 1,956	$ 1,982
County Operating	4.0400	$ 2,633	$ 2,302	$ 7,238	$ 7,337	$ 7,436	$ 7,537	$ 7,639	$ 7,742	$ 7,845	$ 7,950	$ 8,056
OIS Allocated	0.1985	$ 129	$ 113	$ 356	$ 360	$ 365	$ 370	$ 375	$ 380	$ 385	$ 391	$ 396
OIS Voted	3.1413	$ 2,048	$ 1,790	$ 5,628	$ 5,705	$ 5,782	$ 5,860	$ 5,940	$ 6,019	$ 6,100	$ 6,182	$ 6,264
OCC	1.5707	$ 1,024	$ 895	$ 2,814	$ 2,852	$ 2,891	$ 2,930	$ 2,970	$ 3,010	$ 3,050	$ 3,091	$ 3,132
Infrastructure	2.8472	$ 1,856	$ 1,623	$ 5,101	$ 5,171	$ 5,241	$ 5,312	$ 5,383	$ 5,456	$ 5,529	$ 5,603	$ 5,677
City Operating	10.8434	$ 7,068	$ 6,179	$ 19,427	$ 19,692	$ 19,959	$ 20,230	$ 20,503	$ 20,778	$ 21,057	$ 21,338	$ 21,622
City Oper-2015	2.7804	$ 1,812	$ 1,584	$ 4,981	$ 5,049	$ 5,118	$ 5,187	$ 5,257	$ 5,328	$ 5,399	$ 5,471	$ 5,544
Solid Waste	1.6260	$ 1,060	$ 927	$ 2,913	$ 2,953	$ 2,993	$ 3,033	$ 3,074	$ 3,116	$ 3,158	$ 3,200	$ 3,242
Pool/Rec OPER	1.2073	$ 787	$ 688	$ 2,163	$ 2,192	$ 2,222	$ 2,252	$ 2,283	$ 2,313	$ 2,344	$ 2,376	$ 2,407
Park Improvement	0.7190	$ 469	$ 410	$ 1,288	$ 1,306	$ 1,323	$ 1,341	$ 1,359	$ 1,378	$ 1,396	$ 1,415	$ 1,434
Publicity	0.3481	$ 227	$ 198	$ 624	$ 632	$ 641	$ 649	$ 658	$ 667	$ 676	$ 685	$ 694
Total Local Taxes (capturable)	**30.7698**	**$ 20,056**	**$ 17,535**	**$ 55,127**	**$ 55,878**	**$ 56,638**	**$ 57,405**	**$ 58,179**	**$ 58,962**	**$ 59,752**	**$ 60,550**	**$ 61,356**
School Taxes												
School Operating	18.0000	$ 11,733	$ 10,258	$ 32,248	$ 32,688	$ 33,132	$ 33,581	$ 34,034	$ 34,492	$ 34,954	$ 35,421	$ 35,893
SET	6.0000	$ 3,911	$ 3,419	$ 10,749	$ 10,896	$ 11,044	$ 11,194	$ 11,345	$ 11,497	$ 11,651	$ 11,807	$ 11,964
Total School Taxes	**24.0000**	**$ 15,644**	**$ 13,677**	**$ 42,998**	**$ 43,584**	**$ 44,177**	**$ 44,775**	**$ 45,379**	**$ 45,989**	**$ 46,606**	**$ 47,228**	**$ 47,857**
Total Capturable Millages	**54.7698**	**$ 35,700**	**$ 31,212**	**$ 98,124**	**$ 99,463**	**$ 100,814**	**$ 102,179**	**$ 103,558**	**$ 104,951**	**$ 106,357**	**$ 107,778**	**$ 109,213**
Non-Capturable Millages												
Zoo Authority (County)	0.0990	$ 65	$ 56	$ 177	$ 180	$ 182	$ 185	$ 187	$ 190	$ 192	$ 195	$ 197
Art Institute (County)	0.1981	$ 129	$ 113	$ 355	$ 360	$ 365	$ 370	$ 375	$ 380	$ 385	$ 390	$ 395
FPS Sinking Fund (Pleasant Ridge and Ferndale)	1.3000	$ 847	$ 741	$ 2,329	$ 2,361	$ 2,393	$ 2,425	$ 2,458	$ 2,491	$ 2,524	$ 2,558	$ 2,592
FPS Debt (Pleasant Ridge and Ferndale)	7.0000	$ 4,563	$ 3,989	$ 12,541	$ 12,712	$ 12,885	$ 13,059	$ 13,236	$ 13,414	$ 13,593	$ 13,775	$ 13,958
Pool/Rec Debt (Pleasant Ridge)	1.2122	$ 790	$ 691	$ 2,172	$ 2,201	$ 2,231	$ 2,262	$ 2,292	$ 2,323	$ 2,354	$ 2,385	$ 2,417
Library	0.3763	$ 245	$ 214	$ 674	$ 683	$ 693	$ 702	$ 712	$ 721	$ 731	$ 740	$ 750
	10.1856	$ 6,394	$ 5,590	$ 17,574	$ 17,814	$ 18,056	$ 18,300	$ 18,547	$ 18,797	$ 19,049	$ 19,303	$ 19,560
Total Millages	**64.9554**	**$ 42,094**	**$ 36,802**	**$ 115,699**	**$ 117,277**	**$ 118,870**	**$ 120,480**	**$ 122,106**	**$ 123,748**	**$ 125,406**	**$ 127,081**	**$ 128,773**
Annual Local Incremental Taxes			$ 17,535	$ 55,127	$ 55,878	$ 56,638	$ 57,405	$ 58,179	$ 58,962	$ 59,752	$ 60,550	$ 61,356
Annual School Incremental Taxes			$ 13,677	$ 42,998	$ 43,584	$ 44,177	$ 44,775	$ 45,379	$ 45,989	$ 46,606	$ 47,228	$ 47,857
Local Admin Fee			$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500
3 Mils from SET to State Brownfield Fund			$ 1,710	$ 5,375	$ 5,448	$ 5,522	$ 5,597	$ 5,672	$ 5,749	$ 5,826	$ 5,904	$ 5,982
Annual Local Incremental Taxes Minus Admin Fee			$ 11,035	$ 48,627	$ 49,378	$ 50,138	$ 50,905	$ 51,679	$ 52,462	$ 53,252	$ 54,050	$ 54,856
Annual School Incremental Taxes Minus State Fund			$ 11,967	$ 37,623	$ 38,136	$ 38,655	$ 39,178	$ 39,707	$ 40,241	$ 40,780	$ 41,325	$ 41,875
Total Combined Yearly Captured Taxes			**$ 23,003**	**$ 86,250**	**$ 87,515**	**$ 88,792**	**$ 90,083**	**$ 91,386**	**$ 92,702**	**$ 94,032**	**$ 95,374**	**$ 96,731**
Cumulative Combined Captured Taxes			**$ 23,003**	**$ 109,252**	**$ 196,767**	**$ 285,559**	**$ 375,642**	**$ 467,028**	**$ 559,730**	**$ 653,762**	**$ 749,136**	**$ 845,867**
MDEQ Reimbursed Expenses												
Local Taxes			9,936	37,255	37,801	38,353	38,910	39,473	40,042	40,616	41,196	41,782
School Taxes			7,750	29,058	29,484	29,915	30,349	30,788	31,232	31,680	32,132	32,589
Total			17,685	66,313	67,285	68,267	69,259	70,261	71,273	72,296	73,328	74,371
Unreimbursed MDEQ Eligible Expenses		**$ 1,981,091**	**1,963,406**	**1,897,093**	**1,829,808**	**1,761,541**	**1,692,281**	**1,622,020**	**1,550,746**	**1,478,451**	**1,405,123**	**1,330,752**
MSF Reimbursed Expenses												
Local Taxes			2,987	11,201	11,365	11,531	11,699	11,868	12,039	12,211	12,386	12,562
School Taxes			2,330	8,736	8,865	8,994	9,125	9,257	9,390	9,525	9,661	9,798
Total			5,317	19,937	20,230	20,525	20,823	21,124	21,429	21,736	22,046	22,360
Unreimbursed MSF Eligible Expenses		**595,625**	**590,308**	**570,371**	**550,141**	**529,616**	**508,793**	**487,668**	**466,240**	**444,504**	**422,457**	**400,097**
Local Site Remediation Revolving Fund Capture												
Local Taxes												

Tax Ratio	Millages	Percentage
Local Tax	30.7698	56.18%
School Tax	24.0000	43.82%
Total	54.7698	100.00%

Total eligible expense ratio			
MSF	$	595,625	23.12%
MDEQ	$	1,981,091	76.88%
Local	$	-	0.00%
Total	**$**	**2,576,716**	**100.00%**

Eligible activity school/local reimbursement breakdown			
	Local	School	Total
MSF	$334,623	$261,002	**$ 595,625**
MDEQ	$1,112,981	$868,110	**$ 1,981,091**
Total	**$1,447,605**	**$1,129,111**	**$ 2,576,716**

2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820
$ 2,672,311	$ 2,699,034	$ 2,726,024	$ 2,753,284	$ 2,780,817	$ 2,808,625	$ 2,836,712	$ 2,865,079	$ 2,893,729	$ 2,922,667	$ 2,951,893
$ 2,020,491	$ 2,047,214	$ 2,074,204	$ 2,101,464	$ 2,128,997	$ 2,156,805	$ 2,184,892	$ 2,213,259	$ 2,241,909	$ 2,270,847	$ 2,300,073
$ 483	$ 490	$ 496	$ 503	$ 509	$ 516	$ 523	$ 529	$ 536	$ 543	$ 550
$ 434	$ 439	$ 445	$ 451	$ 457	$ 463	$ 469	$ 475	$ 481	$ 487	$ 494
$ 2,009	$ 2,035	$ 2,062	$ 2,089	$ 2,116	$ 2,144	$ 2,172	$ 2,200	$ 2,229	$ 2,257	$ 2,287
$ 8,163	$ 8,271	$ 8,380	$ 8,490	$ 8,601	$ 8,713	$ 8,827	$ 8,942	$ 9,057	$ 9,174	$ 9,292
$ 401	$ 406	$ 412	$ 417	$ 423	$ 428	$ 434	$ 439	$ 445	$ 451	$ 457
$ 6,347	$ 6,431	$ 6,516	$ 6,601	$ 6,688	$ 6,775	$ 6,863	$ 6,953	$ 7,043	$ 7,133	$ 7,225
$ 3,174	$ 3,216	$ 3,258	$ 3,301	$ 3,344	$ 3,388	$ 3,432	$ 3,476	$ 3,521	$ 3,567	$ 3,613
$ 5,753	$ 5,829	$ 5,906	$ 5,983	$ 6,062	$ 6,141	$ 6,221	$ 6,302	$ 6,383	$ 6,466	$ 6,549
$ 21,909	$ 22,199	$ 22,491	$ 22,787	$ 23,086	$ 23,387	$ 23,692	$ 23,999	$ 24,310	$ 24,624	$ 24,941
$ 5,618	$ 5,692	$ 5,767	$ 5,843	$ 5,919	$ 5,997	$ 6,075	$ 6,154	$ 6,233	$ 6,314	$ 6,395
$ 3,285	$ 3,329	$ 3,373	$ 3,417	$ 3,462	$ 3,507	$ 3,553	$ 3,599	$ 3,645	$ 3,692	$ 3,740
$ 2,439	$ 2,472	$ 2,504	$ 2,537	$ 2,570	$ 2,604	$ 2,638	$ 2,672	$ 2,707	$ 2,742	$ 2,777
$ 1,453	$ 1,472	$ 1,491	$ 1,511	$ 1,531	$ 1,551	$ 1,571	$ 1,591	$ 1,612	$ 1,633	$ 1,654
$ 703	$ 713	$ 722	$ 732	$ 741	$ 751	$ 761	$ 770	$ 780	$ 790	$ 801
$ 62,170	**$ 62,992**	**$ 63,823**	**$ 64,662**	**$ 65,509**	**$ 66,364**	**$ 67,229**	**$ 68,102**	**$ 68,983**	**$ 69,874**	**$ 70,773**
$ 36,369	$ 36,850	$ 37,336	$ 37,826	$ 38,322	$ 38,822	$ 39,328	$ 39,839	$ 40,354	$ 40,875	$ 41,401
$ 12,123	$ 12,283	$ 12,445	$ 12,609	$ 12,774	$ 12,941	$ 13,109	$ 13,280	$ 13,451	$ 13,625	$ 13,800
$ 48,492	**$ 49,133**	**$ 49,781**	**$ 50,435**	**$ 51,096**	**$ 51,763**	**$ 52,437**	**$ 53,118**	**$ 53,806**	$ 54,500	$ 55,202
$ 110,662	**$ 112,125**	**$ 113,604**	**$ 115,097**	**$ 116,605**	**$ 118,128**	**$ 119,666**	**$ 121,220**	**$ 122,789**	**$ 124,374**	**$ 125,975**
$ 200	$ 203	$ 205	$ 208	$ 211	$ 214	$ 216	$ 219	$ 222	$ 225	$ 228
$ 400	$ 406	$ 411	$ 416	$ 422	$ 427	$ 433	$ 438	$ 444	$ 450	$ 456
$ 2,627	$ 2,661	$ 2,696	$ 2,732	$ 2,768	$ 2,804	$ 2,840	$ 2,877	$ 2,914	$ 2,952	$ 2,990
$ 14,143	$ 14,330	$ 14,519	$ 14,710	$ 14,903	$ 15,098	$ 15,294	$ 15,493	$ 15,693	$ 15,896	$ 16,101
$ 2,449	$ 2,482	$ 2,514	$ 2,547	$ 2,581	$ 2,614	$ 2,649	$ 2,683	$ 2,718	$ 2,753	$ 2,788
$ 760	$ 770	$ 781	$ 791	$ 801	$ 812	$ 822	$ 833	$ 844	$ 855	$ 866
$ 19,820	$ 20,082	$ 20,346	$ 20,614	$ 20,884	$ 21,157	$ 21,432	$ 21,711	$ 21,992	$ 22,275	$ 22,562
$ 130,481	**$ 132,207**	**$ 133,950**	**$ 135,711**	**$ 137,489**	**$ 139,285**	**$ 141,098**	**$ 142,930**	**$ 144,780**	**$ 146,649**	**$ 148,537**
$ 62,170	$ 62,992	$ 63,823	$ 64,662	$ 65,509	$ 66,364	$ 67,229	$ 68,102	$ 68,983	$ 69,874	$ 70,773
$ 48,492	$ 49,133	$ 49,781	$ 50,435	$ 51,096	$ 51,763	$ 52,437	$ 53,118	$ 53,806	$ 54,500	$ 55,202
$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500
$ 6,061	$ 6,142	$ 6,223	$ 6,304	$ 6,387	$ 6,470	$ 6,555	$ 6,640	$ 6,726	$ 6,813	$ 6,900
$ 55,670	$ 56,492	$ 57,323	$ 58,162	$ 59,009	$ 59,864	$ 60,729	$ 61,602	$ 62,483	$ 63,374	$ 64,273
$ 42,430	$ 42,991	$ 43,558	$ 44,131	$ 44,709	$ 45,293	$ 45,883	$ 46,478	$ 47,080	$ 47,688	$ 48,302
$ 98,100	**$ 99,484**	**$ 100,881**	**$ 102,292**	**$ 103,718**	**$ 105,157**	**$ 106,611**	**$ 108,080**	**$ 109,563**	**$ 111,061**	**$ 112,574**
$ 943,967	**$ 1,043,451**	**$ 1,144,332**	**$ 1,246,625**	**$ 1,350,342**	**$ 1,455,500**	**$ 1,562,111**	**$ 1,670,191**	**$ 1,779,754**	**$ 1,890,816**	**$ 2,003,390**
42,373	42,971	43,574	44,184	44,800	45,421	46,050	46,684	47,325	47,972	48,625
33,051	33,517	33,987	34,463	34,943	35,428	35,918	36,413	36,912	37,417	37,927
75,424	76,487	77,562	78,647	79,743	80,850	81,967	83,097	84,237	85,389	86,552
1,255,328	**1,178,841**	**1,101,279**	**1,022,632**	**942,889**	**862,040**	**780,072**	**696,976**	**612,739**	**527,350**	**440,798**
12,740	12,919	13,101	13,284	13,469	13,656	13,845	14,036	14,228	14,423	14,619
9,937	10,077	10,218	10,361	10,506	10,652	10,799	10,948	11,098	11,250	11,403
22,677	22,996	23,319	23,646	23,975	24,308	24,644	24,983	25,326	25,673	26,022
377,421	**354,424**	**331,105**	**307,459**	**283,484**	**259,177**	**234,533**	**209,549**	**184,223**	**158,550**	**132,528**

Tax Increment Financing Estimates:
Table 2

2039	2040	2041	2042	2043	2044	2045	2046	2047	
Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30	
$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	$ 651,820	
$ 2,981,412	$ 3,011,226	$ 3,041,339	$ 3,071,752	$ 3,102,470	$ 3,133,494	$ 3,164,829	$ 3,196,478	$ 3,228,442	
$ 2,329,592	$ 2,359,406	$ 2,389,519	$ 2,419,932	$ 2,450,650	$ 2,481,674	$ 2,513,009	$ 2,544,658	$ 2,576,622	
$ 557	$ 564	$ 572	$ 579	$ 586	$ 594	$ 601	$ 609	$ 616	**$ 15,165**
$ 500	$ 506	$ 513	$ 519	$ 526	$ 533	$ 539	$ 546	$ 553	**$ 13,606**
$ 2,316	$ 2,345	$ 2,375	$ 2,406	$ 2,436	$ 2,467	$ 2,498	$ 2,530	$ 2,561	**$ 63,026**
$ 9,412	$ 9,532	$ 9,654	$ 9,777	$ 9,901	$ 10,026	$ 10,153	$ 10,280	$ 10,410	**$ 256,135**
$ 462	$ 468	$ 474	$ 480	$ 486	$ 493	$ 499	$ 505	$ 511	**$ 12,585**
$ 7,318	$ 7,412	$ 7,506	$ 7,602	$ 7,698	$ 7,796	$ 7,894	$ 7,994	$ 8,094	**$ 199,158**
$ 3,659	$ 3,706	$ 3,753	$ 3,801	$ 3,849	$ 3,898	$ 3,947	$ 3,997	$ 4,047	**$ 99,582**
$ 6,633	$ 6,718	$ 6,803	$ 6,890	$ 6,977	$ 7,066	$ 7,155	$ 7,245	$ 7,336	**$ 180,512**
$ 25,261	$ 25,584	$ 25,911	$ 26,240	$ 26,573	$ 26,910	$ 27,250	$ 27,593	$ 27,939	**$ 687,469**
$ 6,477	$ 6,560	$ 6,644	$ 6,728	$ 6,814	$ 6,900	$ 6,987	$ 7,075	$ 7,164	**$ 176,277**
$ 3,788	$ 3,836	$ 3,885	$ 3,935	$ 3,985	$ 4,035	$ 4,086	$ 4,138	$ 4,190	**$ 103,088**
$ 2,813	$ 2,849	$ 2,885	$ 2,922	$ 2,959	$ 2,996	$ 3,034	$ 3,072	$ 3,111	**$ 76,543**
$ 1,675	$ 1,696	$ 1,718	$ 1,740	$ 1,762	$ 1,784	$ 1,807	$ 1,830	$ 1,853	**$ 45,584**
$ 811	$ 821	$ 832	$ 842	$ 853	$ 864	$ 875	$ 886	$ 897	**$ 22,069**
$ 71,681	**$ 72,598**	**$ 73,525**	**$ 74,461**	**$ 75,406**	**$ 76,361**	**$ 77,325**	**$ 78,299**	**$ 79,282**	**$ 1,950,798**
$ 41,933	$ 42,469	$ 43,011	$ 43,559	$ 44,112	$ 44,670	$ 45,234	$ 45,804	$ 46,379	**$ 1,141,196**
$ 13,978	$ 14,156	$ 14,337	$ 14,520	$ 14,704	$ 14,890	$ 15,078	$ 15,268	$ 15,460	**$ 380,399**
$ 55,910	$ 56,626	$ 57,348	$ 58,078	$ 58,816	$ 59,560	$ 60,312	$ 61,072	$ 61,839	**$ 1,521,595**
$ 127,591	**$ 129,224**	**$ 130,873**	**$ 132,539**	**$ 134,222**	**$ 135,921**	**$ 137,637**	**$ 139,370**	**$ 141,121**	**$ 3,472,393**
$ 231	$ 234	$ 237	$ 240	$ 243	$ 246	$ 249	$ 252	$ 255	**$ 6,277**
$ 461	$ 467	$ 473	$ 479	$ 485	$ 492	$ 498	$ 504	$ 510	**$ 12,559**
$ 3,028	$ 3,067	$ 3,106	$ 3,146	$ 3,186	$ 3,226	$ 3,267	$ 3,308	$ 3,350	**$ 82,420**
$ 16,307	$ 16,516	$ 16,727	$ 16,940	$ 17,155	$ 17,372	$ 17,591	$ 17,813	$ 18,036	**$ 443,798**
$ 2,824	$ 2,860	$ 2,897	$ 2,933	$ 2,971	$ 3,008	$ 3,046	$ 3,085	$ 3,123	**$ 76,853**
$ 877	$ 888	$ 899	$ 911	$ 922	$ 934	$ 946	$ 958	$ 970	**$ 23,857**
$ 22,852	$ 23,144	$ 23,440	$ 23,738	$ 24,039	$ 24,343	$ 24,651	$ 24,961	$ 25,275	**$ 621,907**
$ 150,443	**$ 152,368**	**$ 154,313**	**$ 156,277**	**$ 158,261**	**$ 160,264**	**$ 162,288**	**$ 164,332**	**$ 166,396**	**$ 4,094,301**
$ 71,681	$ 72,598	$ 73,525	$ 74,461	$ 75,406	$ 76,361	$ 77,325	$ 78,299	$ 79,282	
$ 55,910	$ 56,626	$ 57,348	$ 58,078	$ 58,816	$ 59,560	$ 60,312	$ 61,072	$ 61,839	
$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	
$ 6,989	$ 7,078	$ 7,169	$ 7,260	$ 7,352	$ 7,445	$ 7,539	$ 7,634	$ 7,730	
$ 65,181	$ 66,098	$ 67,025	$ 67,961	$ 68,906	$ 69,861	$ 70,825	$ 71,799	$ 72,782	
$ 48,921	$ 49,548	$ 50,180	$ 50,819	$ 51,464	$ 52,115	$ 52,773	$ 53,438	$ 54,109	
$ 114,103	**$ 115,646**	**$ 117,205**	**$ 118,779**	**$ 120,370**	**$ 121,976**	**$ 123,598**	**$ 125,236**	**$ 126,891**	**$ 3,087,194**
$ 2,117,492	**$ 2,233,138**	**$ 2,350,343**	**$ 2,469,123**	**$ 2,589,492**	**$ 2,711,468**	**$ 2,835,066**	**$ 2,960,303**	**$ 3,087,194**	
49,285	49,952	50,625	51,305	46,474					1,112,981
38,442	38,962	39,487	40,017	36,249					868,110
87,727	88,914	90,112	91,323	82,722					**1,981,091**
353,071	**264,157**	**174,045**	**82,722**	**-**					
14,818	15,018	15,221	15,425	13,973					334,623
11,558	11,714	11,872	12,031	10,898					261,002
26,376	26,732	27,093	27,457	24,871					**595,625**
106,153	**79,420**	**52,328**	**24,871**	**-**					
					$ 69,861	$ 70,825	$ 71,799	$ 72,782	**285,266**

Tax Increment Financing Estimates:
Table 3

		2016	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Base Combined Taxable Value		$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740
Projected Taxable Value (estimated annual increase of 1%)			$ 1,802,425	$ 3,604,850	$ 3,640,899	$ 3,677,307	$ 3,714,081	$ 3,751,221	$ 3,788,734	$ 3,826,621	$ 3,864,887	$ 3,903,536
Incremental Difference (Projected Tax Value *minus* Existing Tax Value)			$ 1,403,685	$ 3,206,110	$ 3,242,159	$ 3,278,567	$ 3,315,341	$ 3,352,481	$ 3,389,994	$ 3,427,881	$ 3,466,147	$ 3,504,796
Local Taxes - Millage												
County Pk & Rec	0.2392	$ 95	$ 336	$ 767	$ 776	$ 784	$ 793	$ 802	$ 811	$ 820	$ 829	$ 838
HCMA	0.2146	$ 86	$ 301	$ 688	$ 696	$ 704	$ 711	$ 719	$ 727	$ 736	$ 744	$ 752
OCPTA	0.9941	$ 396	$ 1,395	$ 3,187	$ 3,223	$ 3,259	$ 3,296	$ 3,333	$ 3,370	$ 3,408	$ 3,446	$ 3,484
County Operating	4.0400	$ 1,611	$ 5,671	$ 12,953	$ 13,098	$ 13,245	$ 13,394	$ 13,544	$ 13,696	$ 13,849	$ 14,003	$ 14,159
OIS Allocated	0.1985	$ 79	$ 279	$ 636	$ 644	$ 651	$ 658	$ 665	$ 673	$ 680	$ 688	$ 696
OIS Voted	3.1413	$ 1,253	$ 4,409	$ 10,071	$ 10,185	$ 10,299	$ 10,414	$ 10,531	$ 10,649	$ 10,768	$ 10,888	$ 11,010
OCC	1.5707	$ 626	$ 2,205	$ 5,036	$ 5,092	$ 5,150	$ 5,207	$ 5,266	$ 5,325	$ 5,384	$ 5,444	$ 5,505
City Operating	13.9451	$ 5,560	$ 19,575	$ 44,710	$ 45,212	$ 45,720	$ 46,233	$ 46,751	$ 47,274	$ 47,802	$ 48,336	$ 48,875
Refuse Disposal	2.0915	$ 834	$ 2,936	$ 6,706	$ 6,781	$ 6,857	$ 6,934	$ 7,012	$ 7,090	$ 7,169	$ 7,249	$ 7,330
City Oper-Voted	4.4552	$ 1,776	$ 6,254	$ 14,284	$ 14,444	$ 14,607	$ 14,771	$ 14,936	$ 15,103	$ 15,272	$ 15,442	$ 15,615
Total Local Taxes (capturable)	**30.8902**	$ 12,317	**$ 43,360**	**$ 99,037**	**$ 100,151**	**$ 101,276**	**$ 102,412**	**$ 103,559**	**$ 104,718**	**$ 105,888**	**$ 107,070**	**$ 108,264**
School Taxes												
School Operating	18.0000	$ 7,177	$ 25,266	$ 57,710	$ 58,359	$ 59,014	$ 59,676	$ 60,345	$ 61,020	$ 61,702	$ 62,391	$ 63,086
SET	6.0000	$ 2,392	$ 8,422	$ 19,237	$ 19,453	$ 19,671	$ 19,892	$ 20,115	$ 20,340	$ 20,567	$ 20,797	$ 21,029
Total School Taxes	**24.0000**	$ 9,570	**$ 33,688**	**$ 76,947**	**$ 77,812**	**$ 78,686**	**$ 79,568**	**$ 80,460**	**$ 81,360**	**$ 82,269**	**$ 83,188**	**$ 84,115**
Total Capturable Millages	**54.8902**	$ 21,887	**$ 77,049**	**$ 175,984**	**$ 177,963**	**$ 179,961**	**$ 181,980**	**$ 184,018**	**$ 186,077**	**$ 188,157**	**$ 190,258**	**$ 192,379**
Non-Capturable Millages												
Zoo Authority (County)	0.0990	$ 39	$ 139	$ 317	$ 321	$ 325	$ 328	$ 332	$ 336	$ 339	$ 343	$ 347
Art Institute (County)	0.1981	$ 79	$ 278	$ 635	$ 642	$ 649	$ 657	$ 664	$ 672	$ 679	$ 687	$ 694
FPS Sinking Fund (Pleasant Ridge and Ferndale)	1.3000	$ 518	$ 1,825	$ 4,168	$ 4,215	$ 4,262	$ 4,310	$ 4,358	$ 4,407	$ 4,456	$ 4,506	$ 4,556
FPS Debt (Pleasant Ridge and Ferndale)	7.0000	$ 2,791	$ 9,826	$ 22,443	$ 22,695	$ 22,950	$ 23,207	$ 23,467	$ 23,730	$ 23,995	$ 24,263	$ 24,534
Pool/Rec Debt (Pleasant Ridge)	1.2122	$ 483	$ 1,702	$ 3,886	$ 3,930	$ 3,974	$ 4,019	$ 4,064	$ 4,109	$ 4,155	$ 4,202	$ 4,249
GWK Facility DBT (Ferndale)	1.7340	$ 691	$ 2,434	$ 5,559	$ 5,622	$ 5,685	$ 5,749	$ 5,813	$ 5,878	$ 5,944	$ 6,010	$ 6,077
Debt Service (Ferndale)	4.1790	$ 1,666	$ 5,866	$ 13,398	$ 13,549	$ 13,701	$ 13,855	$ 14,010	$ 14,167	$ 14,325	$ 14,485	$ 14,647
Library-Voted	0.9587											
Total Non-Capturable Millages	**16.6810**	$ 4,603	**$ 22,069**	**$ 50,407**	**$ 50,974**	**$ 51,547**	**$ 52,125**	**$ 52,709**	**$ 53,298**	**$ 53,894**	**$ 54,496**	**$ 55,103**
Total Millages	**71.5712**	$ 26,490	**$ 99,118**	**$ 226,391**	**$ 228,937**	**$ 231,508**	**$ 234,104**	**$ 236,727**	**$ 239,376**	**$ 242,051**	**$ 244,753**	**$ 247,482**
Annual Local Incremental Taxes			$ 43,360	$ 99,037	$ 100,151	$ 101,276	$ 102,412	$ 103,559	$ 104,718	$ 105,888	$ 107,070	$ 108,264
Annual School Incremental Taxes			$ 33,688	$ 76,947	$ 77,812	$ 78,686	$ 79,568	$ 80,460	$ 81,360	$ 82,269	$ 83,188	$ 84,115
OCBRA Admin Fee			$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Local Admin Fee			$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500
3 Mils from SET to State Brownfield Fund			$ 4,211	$ 9,618	$ 9,726	$ 9,836	$ 9,946	$ 10,057	$ 10,170	$ 10,284	$ 10,398	$ 10,514
Annual Local Incremental Taxes Minus Admin Fee			$ 38,360	$ 94,037	$ 95,151	$ 96,276	$ 97,412	$ 98,559	$ 99,718	$ 100,888	$ 102,070	$ 103,264
Annual School Incremental Taxes Minus State Fund			$ 29,477	$ 67,328	$ 68,085	$ 68,850	$ 69,622	$ 70,402	$ 71,190	$ 71,985	$ 72,789	$ 73,601
Total Combined Yearly Captured Taxes			**$ 67,837**	**$ 161,366**	**$ 163,236**	**$ 165,126**	**$ 167,034**	**$ 168,961**	**$ 170,907**	**$ 172,873**	**$ 174,859**	**$ 176,865**
Cumulative Combined Captured Taxes			**$ 67,837**	**$ 229,203**	**$ 392,439**	**$ 557,565**	**$ 724,599**	**$ 893,560**	**$ 1,064,467**	**$ 1,237,340**	**$ 1,412,200**	**$ 1,589,064**
MDEQ Reimbursed Expenses												
Local Taxes			10,058	23,925	24,202	24,482	24,765	25,051	25,339	25,631	25,925	26,222
School Taxes			7,814	18,588	18,804	19,021	19,241	19,463	19,687	19,914	20,142	20,373
Total			17,872	42,513	43,005	43,503	44,006	44,514	45,026	45,544	46,068	46,596
Unreimbursed MDEQ Eligible Expenses		**$ 1,050,136**	**1,032,264**	**989,751**	**946,746**	**903,243**	**859,237**	**814,723**	**769,696**	**724,152**	**678,084**	**631,489**
MSF Reimbursed Expenses												
Local Taxes			28,119	66,886	67,661	68,445	69,236	70,034	70,841	71,656	72,479	73,310
School Taxes			21,847	51,967	52,569	53,178	53,792	54,413	55,040	55,673	56,312	56,958
Total			49,965	118,853	120,231	121,622	123,028	124,447	125,881	127,329	128,792	130,269
Unreimbursed MSF Eligible Expenses		**2,935,875**	**2,885,910**	**2,767,057**	**2,646,826**	**2,525,204**	**2,402,176**	**2,277,728**	**2,151,848**	**2,024,519**	**1,895,727**	**1,765,458**
Local Site Remediation Revolving Fund Capture												
Local Taxes												

Tax Ratio	Millages	Percentage
Local Tax	30.8902	56.28%
School Tax	24.0000	43.72%
Total	54.8902	100.00%

Total eligible expense ratio			
MSF	$	2,935,875	73.65%
MDEQ	$	1,050,136	26.35%
Local	$	-	0.00%
Total	**$**	**3,986,011**	**100.00%**

Eligible activity school/local reimbursement breakdown				
	Local	School	Total	
MSF	$1,652,203	$1,283,672	**$**	**2,935,875**
MDEQ	$590,978	$459,158	**$**	**1,050,136**
Total	**$2,243,181**	**$1,742,830**	**$**	**3,986,011**

Tax Increment Financing Estimates:
Table 3

2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	
Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	
$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	$ 398,740	
$ 3,942,571	$ 3,981,997	$ 4,021,817	$ 4,062,035	$ 4,102,656	$ 4,143,682	$ 4,185,119	$ 4,226,970	$ 4,269,240	$ 4,311,932	$ 4,355,052	$ 4,398,602	$ 4,442,588	$ 4,487,014	$ 4,531,884	$ 4,577,203	$ 4,622,975	$ 4,669,205	
$ 3,543,831	$ 3,583,257	$ 3,623,077	$ 3,663,295	$ 3,703,916	$ 3,744,942	$ 3,786,379	$ 3,828,230	$ 3,870,500	$ 3,913,192	$ 3,956,312	$ 3,999,862	$ 4,043,848	$ 4,088,274	$ 4,133,144	$ 4,178,463	$ 4,224,235	$ 4,270,465	
$ 848	$ 857	$ 867	$ 876	$ 886	$ 896	$ 906	$ 916	$ 926	$ 936	$ 946	$ 957	$ 967	$ 978	$ 989	$ 999	$ 1,010	$ 1,021	**$ 24,337**
$ 761	$ 769	$ 778	$ 786	$ 795	$ 804	$ 813	$ 822	$ 831	$ 840	$ 849	$ 858	$ 868	$ 877	$ 887	$ 897	$ 907	$ 916	**$ 21,834**
$ 3,523	$ 3,562	$ 3,602	$ 3,642	$ 3,682	$ 3,723	$ 3,764	$ 3,806	$ 3,848	$ 3,890	$ 3,933	$ 3,976	$ 4,020	$ 4,064	$ 4,109	$ 4,154	$ 4,199	$ 4,245	**$ 101,142**
$ 14,317	$ 14,476	$ 14,637	$ 14,800	$ 14,964	$ 15,130	$ 15,297	$ 15,466	$ 15,637	$ 15,809	$ 15,983	$ 16,159	$ 16,337	$ 16,517	$ 16,698	$ 16,881	$ 17,066	$ 17,253	**$ 411,039**
$ 703	$ 711	$ 719	$ 727	$ 735	$ 743	$ 752	$ 760	$ 768	$ 777	$ 785	$ 794	$ 803	$ 812	$ 820	$ 829	$ 839	$ 848	**$ 20,196**
$ 11,132	$ 11,256	$ 11,381	$ 11,508	$ 11,635	$ 11,764	$ 11,894	$ 12,026	$ 12,158	$ 12,293	$ 12,428	$ 12,565	$ 12,703	$ 12,842	$ 12,983	$ 13,126	$ 13,270	$ 13,415	**$ 319,603**
$ 5,566	$ 5,628	$ 5,691	$ 5,754	$ 5,818	$ 5,882	$ 5,947	$ 6,013	$ 6,079	$ 6,146	$ 6,214	$ 6,283	$ 6,352	$ 6,421	$ 6,492	$ 6,563	$ 6,635	$ 6,708	**$ 159,807**
$ 49,419	$ 49,969	$ 50,524	$ 51,085	$ 51,651	$ 52,224	$ 52,801	$ 53,385	$ 53,975	$ 54,570	$ 55,171	$ 55,778	$ 56,392	$ 57,011	$ 57,637	$ 58,269	$ 58,907	$ 59,552	**$ 1,418,808**
$ 7,412	$ 7,494	$ 7,578	$ 7,662	$ 7,747	$ 7,833	$ 7,919	$ 8,007	$ 8,095	$ 8,184	$ 8,275	$ 8,366	$ 8,458	$ 8,551	$ 8,644	$ 8,739	$ 8,835	$ 8,932	**$ 212,794**
$ 15,788	$ 15,964	$ 16,142	$ 16,321	$ 16,502	$ 16,684	$ 16,869	$ 17,056	$ 17,244	$ 17,434	$ 17,626	$ 17,820	$ 18,016	$ 18,214	$ 18,414	$ 18,616	$ 18,820	$ 19,026	**$ 453,283**
$ 109,470	**$ 110,688**	**$ 111,918**	**$ 113,160**	**$ 114,415**	**$ 115,682**	**$ 116,962**	**$ 118,255**	**$ 119,561**	**$ 120,879**	**$ 122,211**	**$ 123,557**	**$ 124,915**	**$ 126,288**	**$ 127,674**	**$ 129,074**	**$ 130,487**	**$ 131,916**	**$ 3,142,843**
$ 63,789	$ 64,499	$ 65,215	$ 65,939	$ 66,670	$ 67,409	$ 68,155	$ 68,908	$ 69,669	$ 70,437	$ 71,214	$ 71,998	$ 72,789	$ 73,589	$ 74,397	$ 75,212	$ 76,036	$ 76,868	**$ 1,831,363**
$ 21,263	$ 21,500	$ 21,738	$ 21,980	$ 22,223	$ 22,470	$ 22,718	$ 22,969	$ 23,223	$ 23,479	$ 23,738	$ 23,999	$ 24,263	$ 24,530	$ 24,799	$ 25,071	$ 25,345	$ 25,623	**$ 610,454**
$ 85,052	**$ 85,998**	**$ 86,954**	**$ 87,919**	**$ 88,894**	**$ 89,879**	**$ 90,873**	**$ 91,878**	**$ 92,892**	$ 93,917	$ 94,951	$ 95,997	$ 97,052	$ 98,119	$ 99,195	$ 100,283	$ 101,382	$ 102,491	**$ 2,441,817**
$ 194,522	**$ 196,686**	**$ 198,871**	**$ 201,079**	**$ 203,309**	**$ 205,561**	**$ 207,835**	**$ 210,132**	**$ 212,453**	**$ 214,796**	**$ 217,163**	**$ 219,553**	**$ 221,968**	**$ 224,406**	**$ 226,869**	**$ 229,357**	**$ 231,869**	**$ 234,407**	**$ 5,584,660**
$ 351	$ 355	$ 359	$ 363	$ 367	$ 371	$ 375	$ 379	$ 383	$ 387	$ 392	$ 396	$ 400	$ 405	$ 409	$ 414	$ 418	$ 423	**$ 10,072**
$ 702	$ 710	$ 718	$ 726	$ 734	$ 742	$ 750	$ 758	$ 767	$ 775	$ 784	$ 792	$ 801	$ 810	$ 819	$ 828	$ 837	$ 846	**$ 20,155**
$ 4,607	$ 4,658	$ 4,710	$ 4,762	$ 4,815	$ 4,868	$ 4,922	$ 4,977	$ 5,032	$ 5,087	$ 5,143	$ 5,200	$ 5,257	$ 5,315	$ 5,373	$ 5,432	$ 5,492	$ 5,552	**$ 132,265**
$ 24,807	$ 25,083	$ 25,362	$ 25,643	$ 25,927	$ 26,215	$ 26,505	$ 26,798	$ 27,093	$ 27,392	$ 27,694	$ 27,999	$ 28,307	$ 28,618	$ 28,932	$ 29,249	$ 29,570	$ 29,893	**$ 712,197**
$ 4,296	$ 4,344	$ 4,392	$ 4,441	$ 4,490	$ 4,540	$ 4,590	$ 4,641	$ 4,692	$ 4,744	$ 4,796	$ 4,849	$ 4,902	$ 4,956	$ 5,010	$ 5,065	$ 5,121	$ 5,177	**$ 123,332**
$ 6,145	$ 6,213	$ 6,282	$ 6,352	$ 6,423	$ 6,494	$ 6,566	$ 6,638	$ 6,711	$ 6,785	$ 6,860	$ 6,936	$ 7,012	$ 7,089	$ 7,167	$ 7,245	$ 7,325	$ 7,405	**$ 176,421**
$ 14,810	$ 14,974	$ 15,141	$ 15,309	$ 15,479	$ 15,650	$ 15,823	$ 15,998	$ 16,175	$ 16,353	$ 16,533	$ 16,715	$ 16,899	$ 17,085	$ 17,272	$ 17,462	$ 17,653	$ 17,846	**$ 425,181**
$ 55,717	**$ 56,337**	**$ 56,963**	**$ 57,595**	**$ 58,234**	**$ 58,879**	**$ 59,531**	**$ 60,189**	**$ 60,853**	**$ 61,524**	**$ 62,202**	**$ 62,887**	**$ 63,579**	**$ 64,277**	**$ 64,983**	**$ 65,695**	**$ 66,415**	**$ 67,142**	$ 1,599,624
$ 250,239	$ 253,023	$ 255,835	$ 258,674	$ 261,543	$ 264,440	$ 267,366	$ 270,321	$ 273,306	$ 276,320	$ 279,365	$ 282,440	$ 285,546	$ 288,683	$ 291,852	$ 295,052	$ 298,284	$ 301,548	$ 7,184,284
$ 109,470	$ 110,688	$ 111,918	$ 113,160	$ 114,415	$ 115,682	$ 116,962	$ 118,255	$ 119,561	$ 120,879	$ 122,211	$ 123,557	$ 124,915	$ 126,288	$ 127,674	$ 129,074	$ 130,487	$ 131,916	
$ 85,052	$ 85,998	$ 86,954	$ 87,919	$ 88,894	$ 89,879	$ 90,873	$ 91,878	$ 92,892	$ 93,917	$ 94,951	$ 95,997	$ 97,052	$ 98,119	$ 99,195	$ 100,283	$ 101,382	$ 102,491	
$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	
$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	
$ 10,631	$ 10,750	$ 10,869	$ 10,990	$ 11,112	$ 11,235	$ 11,359	$ 11,485	$ 11,611	$ 11,740	$ 11,869	$ 12,000	$ 12,132	$ 12,265	$ 12,399	$ 12,535	$ 12,673	$ 12,811	
$ 104,470	$ 105,688	$ 106,918	$ 108,160	$ 109,415	$ 110,682	$ 111,962	$ 113,255	$ 114,561	$ 115,879	$ 117,211	$ 118,557	$ 119,915	$ 121,288	$ 122,674	$ 124,074	$ 125,487	$ 126,916	
$ 74,420	$ 75,248	$ 76,085	$ 76,929	$ 77,782	$ 78,644	$ 79,514	$ 80,393	$ 81,280	$ 82,177	$ 83,083	$ 83,997	$ 84,921	$ 85,854	$ 86,796	$ 87,748	$ 88,709	$ 89,680	
$ 178,890	**$ 180,936**	**$ 183,002**	**$ 185,089**	**$ 187,197**	**$ 189,326**	**$ 191,476**	**$ 193,648**	**$ 195,841**	**$ 198,056**	**$ 200,294**	**$ 202,554**	**$ 204,836**	**$ 207,141**	**$ 209,470**	**$ 211,821**	**$ 214,196**	**$ 216,595**	**$ 5,139,433**
$ 1,767,954	**$ 1,948,890**	**$ 2,131,892**	**$ 2,316,981**	**$ 2,504,178**	**$ 2,693,504**	**$ 2,884,980**	**$ 3,078,628**	**$ 3,274,469**	**$ 3,472,525**	**$ 3,672,819**	**$ 3,875,373**	**$ 4,080,209**	**$ 4,287,350**	**$ 4,496,820**	**$ 4,708,641**	**$ 4,922,837**	**$ 5,139,433**	
26,523	26,826	27,132	27,442	27,754	28,070	28,389	28,711	29,036	29,364	29,696	30,031	16,404						590,978
20,607	20,842	21,080	21,321	21,564	21,809	22,057	22,307	22,559	22,815	23,072	23,333	12,745						459,158
47,130	47,669	48,213	48,763	49,318	49,879	50,445	51,018	51,595	52,179	52,768	53,364	29,148						**1,050,136**
584,359	**536,690**	**488,478**	**439,715**	**390,397**	**340,518**	**290,072**	**239,055**	**187,460**	**135,281**	**82,512**	**29,148**	**-**						
74,150	74,998	75,854	76,720	77,593	78,476	79,367	80,267	81,176	82,094	83,022	83,959	45,860						1,652,203
57,611	58,269	58,935	59,607	60,286	60,971	61,664	62,363	63,069	63,783	64,503	65,231	35,630						1,283,672
131,761	133,267	134,789	136,326	137,879	139,447	141,031	142,630	144,246	145,877	147,525	149,190	81,490						**2,935,875**
1,633,698	**1,500,430**	**1,365,641**	**1,229,315**	**1,091,436**	**951,989**	**810,958**	**668,328**	**524,083**	**378,205**	**230,680**	**81,490**	**-**						
													$ 121,288	$ 122,674	$ 124,074	$ 125,487	$ 126,916	**620,438**

City of Pleasant Ridge

James Breuckman, City Manager

From: Jim Breuckman, City Manager

To: City Commission

Date: April 13, 2017

Re: 2017 City Property Value and Headlee Rollback Update

Overview

The City experienced another year of strong property value growth. This will again have the effect of triggering a Headlee rollback that reduces the City's millage rate to ensure that local tax revenues do not grow faster than inflation.

Background

Property values in Pleasant Ridge have shown strong growth in recent years, rising 10.4% in 2015 and 6% in 2016. With this strong growth in property values it would be expected that the City's property tax revenue would show similar growth, however, this is not the case. The City's property tax collections are limited to the rate of inflation, which is 0.9% for FY17-18.

To ensure that the City's property tax collections do not exceed the rate of inflation, the City's millage rate is being reduced by 1.8% this year. Property owners who have lived in Pleasant Ridge since before 2016 will see the taxable value of their property increase by 0.9%, regardless of the market value increase of their property. This means that:

- Most residents in Pleasant Ridge (91.9%) will see a reduction in the amount of taxes they pay to the City in 2017 compared to 2016, and
- The average reduction for residents who did not buy a home or make substantial improvements to their home in Pleasant Ridge in 2016 is $29.

I will provide an in-depth presentation at the meeting on April 18 on the City's 2017 assessed and taxable values, our millage rate, how the Headlee Amendment and Proposal A impact local government finances, and what this all means for our upcoming FY17-18 budget which will be introduced at the May 9 meeting.

Requested Action

No requested action.