The Remediator

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What's Inside

(Click on a page number to go directly to that article)

Refined Petroleum Fund Temporary Reimbursement Program Update 1

DEQ Recognized by Board of Saginaw Future Inc.....1

Commodity Metals Residential Lead Cleanup Update 2

Data Criteria Comparison 2

RRD Receives Thank You for Work Done in Highland Park 2

The City of Detroit: Partnering with and Leveraging DEQ Funding 2

Brownfields 2008 Conference.....3

Contaminated Site Cleanup and Redevelopment..... 4

Water System Replacements 4

Final Remediation for the Cannelton Industrial Inc. Superfund Site Underway 5

DNAPL Characterization and Remediation 6

RRD Transfers and Promotions..... 7

Csat Operational Memorandum..... 7

Land Transfer Process and Economic Redevelopment Success at the Former Wurtsmith Air Force Base..... 8

Recent RRD Information on the Web.....9

REFINED PETROLEUM FUND TEMPORARY REIMBURSEMENT PROGRAM

The Department of Environmental Quality's (DEQ's) Refined Petroleum Fund Temporary Reimbursement Program (TRP) for leaking underground storage tank sites has accepted the first round of pre-certification applications from November 1, 2006, through April 30, 2007. The program is for persons who had approved claims under the former MUSTFA program, or persons with a valid assignment of an approved MUSTFA claim for high risk sites of contamination. Eligible persons will receive reimbursement of 80 percent for each approved work invoice, up to a maximum total reimbursement amount of $50,000 per approved MUSTFA claim. The first round of applications has resulted in 651 pre-certification applications, 502 of which were approved, resulting in an allocation of $25.1 million. To receive funding, the approved applicant must retain a Qualified Underground Storage Tank Consultant (QC) to perform the corrective actions in accordance with Part 213.

Applicants whose applications have been denied may make an appeal to the DEQ within 14 days of receiving their denial letter. Section 21561(1) of Part 215, has provisions for the appeals to be first heard by a Temporary Reimbursement Program Advisory Board for making recommendations, and for final agency action by the RRD division chief. The Board had not been fully appointed as of May 2, 2007, when the Governor's Executive Order 2007-6, abolished it effective July 15, 2007. Barring an override of the Executive Order, the appeals will be reviewed directly by the RRD division chief with the effect from July 15, 2007.

There are funds available for a second round of applications, with the eligibility criteria the same as the first round, except that the site classification is to be based on most recent data. The second round will formally be announced in late June 2007 with applications being accepted in August 2007. A more detailed program description is available on the Internet from the Temporary Reimbursement Program link on the DEQ's Remediation and Redevelopment Division's (RRD's) home page www.michigan.gov/deqrrd.

For further updates on the TRP, the DEQ recommends that you subscribe to the DEQ-RRD's electronic mailing list (listserver) by sending an e-mail message to: rpf@michigan.gov

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-Article by Mohammad Yusaf, Program Support Section Chief

DEQ Recognized by Board of Saginaw Future Inc.

On February 23, 2007, the DEQ was honored with an Economic Excellence Award for Outstanding Site Redevelopment for its participation in the redevelopment of the former Ferro-Met Scrap Yard in the city of Saginaw.

COMMODITY METALS RESIDENTIAL LEAD CLEANUP UPDATE

In 2003, the Michigan Department of Environmental Quality (DEQ), Remediation and Development Division (RRD) in conjunction with Wayne County, began an assessment of potential and former lead smelting facilities in the Detroit Metropolitan area as part of the Wayne County/Detroit Area Historical Smelter Project. This project identified the former smelter, Commodity Metals, as a potential source of contamination to the surrounding community. Additional investigation and sampling by the RRD discovered elevated lead in the soils of the residential neighborhood located northeast of the former smelter in the city of Hamtramck. Sampling of the residential yards identified lead concentrations ranging from 400 to 1,100 parts per million (ppm). The extent of the affected neighborhood potentially encompasses approximately 300 residential properties. As part of a Brownfield Redevelopment Grant, in 2003 Wayne County and the city of Hamtramck remediated approximately 65 of the lead contaminated properties within the site boundary on the properties closest to Commodity Metals.

The RRD was able to sample approximately half of the potentially affected properties in 2004-2005 and found 76 properties with exceedances of the residential criteria of 400 ppm. There are still 148 residential properties that need to be assessed. The estimated cost of remediation for the 76 known properties and estimated 50 percent of the remaining unsampled properties exceeded $3 million dollars. Since sufficient funding to complete the assessments and remediation was not available, the DEQ requested assistance from the United States Environmental Protection Agency (U.S. EPA). In August 2006, the U.S. EPA allocated three million dollars to the site. The RRD agreed to continue the site assessment sampling with the U.S. EPA focusing on site access and remediation. On September 5, 2006, the U.S. EPA and its contractors mobilized to the site to initiate the cleanup action. It was determined that the cleanup would occur in two stages, fall of 2006 and spring of 2007.

The first stage of the remediation was completed on December 15, 2006, and the U.S. EPA returned end of April 2007 and is continuing to conduct activities through the month of July 2007. During this time they will continue to attempt to gain access to the remaining properties. As of this date, 84 properties have been remediated, 45 properties still require remediation, and 40 require access agreements for sampling. A total of 3,540 cubic yards of lead contaminated soil has been transported and disposed of and an additional 940 yards of D008 Hazardous Waste has been transported and disposed. I am happy to report that at this time the U.S. EPA, the DEQ, the city of Hamtramck, Wayne County, and most importantly the citizens of the affected neighborhood are all satisfied about the progress and work that has been accomplished.

-Article by Edward Novak

DATA CRITERIA COMPARISON

The RRD has developed a software application that reads laboratory data provided electronically in spreadsheet format and generates reports showing the comparison of the generic cleanup criteria to the laboratory results. Lab data must be provided electronically in a very simple spreadsheet format. Instructions to provide the data in the required spreadsheet format are included with the application. The application requires Microsoft Access 2003 and Excel. The application is available at http://www.michigan.gov/degrrd and help is available from the RRD to assist parties. Contact Arvine Ralph Curtis, email curtisar@michigan.gov, or telephone 517-373-8389.

RRD RECIEVES THANK YOU FOR WORK DONE IN HIGHLAND PARK

In January 2007, MDEQ Director Stephen Chester received a letter on behalf of Focus: HOPE and the Highland Park Illegal Dumping Task Force thanking the RRD for their efforts in cleaning up 133 illegally dumped piles of dirt and solid waste in the city of Highland Park. The letter's author, Eleanor J. Josaitis, the Co-Founder of Focus: HOPE states that "By sampling and appropriately disposing of these piles, the MDEQ has made a huge difference in lives of many in Highland Park and in the surrounding communities."

THE CITY OF DETROIT: PARTNERING WITH AND LEVERAGING DEQ FUNDING

The city of Detroit will significantly change how brownfield properties are addressed with planners, developers, and other interested parties, and how property information is received and electronically stored and utilized. Through partnership with the DEQ and cooperation with multiple public and private stakeholders, the Detroit Department of Environmental Affairs (DEA) has constructed a geographic information system (GIS) to support brownfield redevelopment initiatives in Michigan's oldest industrial city. The tools created through this project have catalyzed brownfield redevelopment along Detroit's previously industrial riverfront, and should support additional brownfield redevelopment. The type of brownfield information assembled and the resultant GIS tool are one-of-a-kind.

A Site Assessment Fund Grant from the DEQ, enabled the City to prepare a GIS framework that: leverages historical property information; makes determinations about risk factors that hinder redevelopment; allows development of preliminary risk assessments on an area-wide basis; and provides site-specific and regional information for planning and redevelopment activities, including site assessments. The tool provides an "economy of scale" during the evaluation of multiple properties.

The DEA was awarded a Vacant Lot Management System grant from Environmental Systems Research Institute (ESRI) and Magellan. There are two primary objectives of this grant

program. First, show innovative GIS and GPS applications aimed at producing or enhancing property inventory and encouraging redevelopment of vacant or abandoned properties. Second, create and share reusable GIS and GPS applications between governments with similar projects via a public domain Web site. Detroit is therefore developing a Vacant Lot Management System and a brownfields development GIS/GPS integrated web-based system. Work is being conducted in target investigation areas including the central business district and riverfront.

The GIS/GPS tool constructed through these combined projects will provide valuable services to Detroit's public and private brownfield stakeholders:

- Allow preliminary screening of typical risks or unknowns associated with environmental and constructability issues that hinder redevelopment;
- Create a data management tool and an electronic archive of property information relevant to brownfields;
- Evaluate the potential level of effort necessary to investigate properties for budget preparation or contractor selection purposes;
- Support strategic planning and master planning initiatives that prioritizes areas within Detroit for investigation, funding, and redevelopment;
- Allow web-based searches of properties that meet a potential development team's risk tolerances, property needs, and infrastructure needs;

- Implement community/environmental policing efforts in every City precinct;
- Initiate a training program for environmental policing that involves local, state and federal laws;
- Identify illegal dump sites more expeditiously and prevent further accumulation of illegal dumping waste;
- Provide more community outreach through community/environmental efforts;
- Increase surveillance and site monitoring activities throughout the city of Detroit;
- Respond appropriately to incidents that may be potentially hazardous to the public or the environment; and
- Respond to citizen complaints more efficiently by creating a unified process within the City to deal with illegal dumping, vacant lot management and other environmental complaints.

Additional goals are to identify publicly and privately owned vacant lots. Then coordinate, through the GIS/GPS system, various city departments to assist in lot maintenance, identify excess city property, track illegal dumping, and inventory all vacant lots.

Excerpts from an article written by Vincent R. Nathan, PHD, MPH, Director Department of Environmental Affairs, city of Detroit

City of Detroit from Belle Isle

Detroit to Host Brownfields 2008 Conference

The U.S. EPA Brownfields Program plans to cosponsor the 12th national Brownfields Conference May 5-7, 2008 at the Detroit Cobo Center, Detroit, MI.

The Brownfields 2008 Conference will see stakeholders from community, planning, real estate, finance, and policy interests from across the nation converge to focus on brownfields cleanup, redevelopment, and a broad range of land revitalization solutions.

For more information please check the official Brownfields 2008 Conference website www.brownfields2008.org.

CONTAMINATED SITE CLEANUP AND REDEVELOPMENT

The Challenge

- There are tens of thousands of contaminated sites in Michigan, a product of both our industrial history and contemporary activities.
- The consequences of contaminated sites are real: public and private drinking water supplies are threatened; children are exposed to lead and other hazards; economic productivity of land is reduced; and recreational resources are impaired. Contaminated sites have a dramatic blighting influence, often in core urban areas.
- Landfills, leaking underground storage tanks, manufacturing sites, dry cleaners, and other sources of contamination are present in virtually every community in Michigan. Half of the people in Michigan rely on groundwater for their drinking water, which can be contaminated by these sources.
- The backlog of sites numbers in the thousands and continues to grow because there is insufficient funding in the public and private sectors to address the problem. Besides the high costs of site cleanup, a site can require decades of operation and maintenance.

Program Accomplishments

- Michigan is a national leader in redevelopment of contaminated sites. Innovative ideas, such as land-use based cleanup requirements, tools to protect new owners and developers from liability for site cleanup costs, and financial incentives have resulted in the successful redevelopment of thousands of sites.
- Michigan has had a program to address "orphan sites" where liable parties are unwilling or unable to respond to contamination, since the late 1970s. $927 million in public funding has allowed for actions to protect public health, safety, welfare, and the environment, and to facilitate redevelopment at 1,771 sites:
  - Provided safe drinking water at over 12,000 homes and businesses.
  - Immediate physical contact and fire/explosion risks have been addressed at hundreds of sites.
  - Containment and cleanup work has been done at nearly 50 landfills.
  - More than 150 abandoned, dangerous buildings have been demolished.
  - More than 521 sites have been prepared for redevelopment.

Funding Needs

- Funding to support the cleanup and redevelopment program has historically been provided by a variety of sources, but predominantly by bond issues in 1988 ($425 million) and 1998 ($335 million). Currently, available funding for the program is nearly exhausted. Beginning in Fiscal Year (FY) 2007, no new projects can be funded and work at many sites is being reduced.
- During 2007-2008 the state must find a way to provide stable and secure funding sources for the cleanup and redevelopment program.
- The DEQ has identified a need of approximately $100 million per year to provide continued activities to address orphan sites and redevelopment-related needs, not including leaking underground storage tanks. Leaking underground storage tank cleanup needs are at least $250 million per year, about ten times as much as current dedicated funding provides. Operating at current funding levels will not significantly reduce the backlog of tank sites requiring publicly funded responses.
- An adequate continuing source of funding for the state's cleanup and redevelopment programs will not only protect Michigan citizens and their quality of life, but contribute to the economic vitality of our communities. The cleanup and redevelopment program provides highly effective tools for communities to deal with blight and put contaminated sites back into productive use, thereby creating jobs and increasing the tax base.

WATER SYSTEM REPLACEMENTS

The DEQ Remediation and Redevelopment Division acts quickly to replace drinking water systems when there is a potential for individual or community water wells to be impacted from contamination. The RRD has managed 243 such water system replacement projects across Michigan, serving over 12,000 homes and businesses. Over $52.7 million has been appropriated by the legislature. This work is critical to protecting the citizens of Michigan.

Click on the following link for more information, including a table listing 207 of the most significant water system replacement projects managed by the RRD:
http://www.michigan.gov/deq/0,1607,7-135-3311_4110_23244-99801--,00.html

-by Ron Smedley, Redevelopment Specialist,

FINAL REMEDIATION PHASE for the CANNELTON INDUSTRIAL INC. SUPERFUND SITE UNDERWAY

The DEQ has agreed to provide $600,000 under a cost share agreement with the U.S. EPA and private parties to conduct contaminated sediment removal in the St. Mary's River in Sault Ste. Marie. The project is estimated to cost eight million dollars in total. The parties are also working together on this project to aid the municipality in redeveloping the site. The source of the DEQ funding is the Clean Michigan Initiative Bond. The source of the U.S. EPA funding is the Great Lakes Legacy Act fund.

Aerial view of Northwestern Tannery, Sault Ste. Maria

The site, now known as Cannelton Industries, Inc., resulted from operations of the Northwestern Leather Tannery which operated at the site from 1900 to 1958. Remedial investigations completed in the early 1990s showed that the tannery operations caused substantial chromium, mercury and other heavy metal contamination in a wetland on the river and in river sediments. Various cleanup activities have taken place since 1993. In June 1999 the responsible parties funded excavation of 33,000 tons of waste and soils from the St. Mary's river shoreline, and disposal in two off-site landfills. The shoreline was re-graded, seeded and stabilized.

Photo of Weston Contractor Chris Cantinga and Marc Tuchman of the U.S. EPA

U.S. EPA Superfund was moving toward an in-place stabilization remedy for the sediments, but the state used results of storm erosion modeling and bioaccumulation studies to demonstrate continued risks inherent to this approach. When the U.S. EPA Great Lakes National Program Office was authorized to use Great Lakes Legacy funding for Area of Concern cleanups the state worked with U.S. EPA and the responsible party to negotiate cost sharing of a more permanent remedy. The DEQ's contribution of $600,000 gave the state project manager a stronger voice in changing the remedy to a removal cleanup, and in negotiating sediment cleanup levels. This remedy will be much more reliable in the long-term. DEQ statutes do not directly specify sediment cleanup levels for chromium and mercury.

Sediment Removal Actions

This sediment removal project will include the removal and disposal of contaminated river and wetland sediments, wastewater treatment, and shoreline stabilization. The 40,000 cu. yards of sediments to be removed from the bay have concentrations of chromium (trivalent) ranging as high as 40,000 mg/kg and mercury concentrations as high as 5 mg/kg. Operations last fall removed 8,000 cu. yards, with the remainder planned to come during summer 2007. Once the remedial work is completed, the site will be prepared to be deleted from the National Priorities List and removed from the list of sites of concern on the American side of the St. Mary's River Area of Concern of the International Joint Commission. The city of Sault Ste. Marie is interested in using the former plant area for municipal purposes, and other land uses are being considered for other site areas, including perhaps a bike trail along the lakeshore.

If you have any questions about this site please contact Bruce VanOtteren, Project Manager, at 517-373-8427.

THE "FIRST INTERNATIONAL CONFERENCE ON DNAPL CHARACTERIZATION AND REMEDIATION" WAS HELD IN PITTSBURGH, ON SEPTEMBER 25-28, 2006.

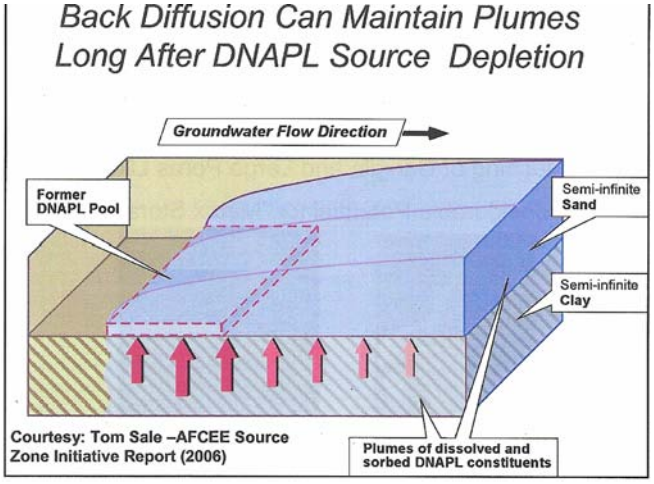
The conference programs included presentations on many case studies, documenting remedial success at DNAPL sites with the use of new remedial technologies, improved traditional technologies, as wells as combined or sequential remediation methods used in treatment trains.

Some of the critical problem areas and research needs that were identified include:

- The evaluation of DNAPL source zones is often deficient because the site investigation has been focused on aquifers and the dissolved phase. The source zone is often not evaluated and the mass of DNAPL is rarely determined;
- The site conceptual model is inadequate if the mass and architecture of the source area have not been determined;
- A major problem identified is that conventional site investigation methods do not include collecting and analyzing soil samples from the saturated zone;
- Without an adequate conceptual model, the remediation often fails; and
- As contaminants continue to dissolve into the aquifer, long term monitoring becomes very costly.

Until recently, little improvement was noted in risk reduction following source zone treatment. That was because only the pooled DNAPL or dissolved phase in permeable zones was evaluated and treated. The sorbed DNAPL in the low permeability silts and clays was neither investigated nor remediated.

Most serious efforts to address DNAPL have only occurred in the last 5 years. The current focus of investigations emphasizes groundwater investigations, which preferentially sample the higher permeability layers. Rebound, the back-diffusion from the remaining source zone contamination in the lower permeability zones, occurs after the high permeability portion of the aquifer has been remediated. The dissolved plume generated from this remaining source zone will expand until a new equilibrium condition has been reached between the aquifer and the source zone. This can take many years to develop.



Recommendations and conclusions from the conference include:

- The recommended conceptual model of what constitutes "source areas" includes both sorbed and pooled DNAPL areas.
- The evaluation of the source zone must include the low permeability zones.
- Investigation should include increased use of continuous soil cores.
- Lower permeability zones can trap and store significant mass ("Matrix Storage"). It is difficult to deliver remedial agents to these flow-limited areas.
- Less permeable zones (even if they have lower concentrations) can control site cleanup time more than the high permeability zones.
- Remediation of DNAPL requires more robust remedial methods and in some cases, implementation of combined methods or planned treatment trains. Choose treatment methods that can effectively treat flow limited portions of the source.
- Reaching a new state of equilibrium between source zone and aquifer can take a long time. If contamination remains in the DNAPL source zone, it will continue to flux into the aquifer over time. The assimilative capacity of the aquifer will determine the size of the resulting "rebound" contaminant plume. Long term monitoring will likely be required.
- Closure success should be measured with saturated soil samples and groundwater monitoring rather than just the dissolved concentrations in groundwater.
- With better understanding of the mass of the source area and planning of more robust treatment methods, we can clean up DNAPL source zones to risk based criteria.
- Implement a risk-based approach for cleanup of DNAPL sites, selectively targeting resources at those sites where sufficient characterization has been obtained and where risk reduction is necessary.

For more information please refer to the conference abstracts: First International Conference on DNAPL Characterization and Remediation, Pittsburgh, Pennsylvania, Sept, 2006, Redox Technologies, Inc., London Ontario. The Second International DNAPL Conference has been scheduled for September 24-27, 2007 in Niagara Falls, New York.

-Article by Carol Hefferan, Kalamazoo District Office

RRD TRANSFERS AND PROMOTIONS

Jeremy Boyd, who previously worked for RRD, returned on December 4th, from a 1.5 year stint working for the Education Department in the MEAP testing area. He holds a B.A. in Business Administration/Management from Baker College. He will continue his duties as the Division's Budget Analyst.

Diane Doubrava initially worked with the Department of Corrections and then transferred to the Department of Natural Resources in Cadillac. She had been with the DEQ working for the Geological Survey and the Air Quality Divisions in the Cadillac District Office since the reorganization that created the DEQ. She worked with the same two divisions while being in the DNR. She is now working for the Executive Section and Toxicological Unit of RRD.

Karen Williams transferred from Detroit Field Office to the district office in Warren on January 15, 2007.

Paul Owens is the new Environmental Manager 13 in the Southeast Michigan District. He will be supervising staff responsible for all the response activities in Wayne County, including the Detroit Field Office. Paul started his new position on March 26th.

David H. Koski of the Compliance and Enforcement Section was rewarded credentials as a Certified Forensic Financial Analyst (CFFA) by the National Association of Certified Valuation Analyst. The certification was granted with recognition of additional training in economic damages. Along with the CFFA, David passed the CPA exam, earned his masters degree in Public Administration from Western Michigan University and holds credentials as an Accredited Valuation Analyst.

Csat Technical Support Document

In recent discussions with consultants it has come to our attention that there is some confusion regarding the necessary evaluation when soil concentrations of contaminants exceed saturation (C_{sat} soils). At soil concentrations above C_{sat} for a contaminant, non aqueous phase liquid (NAPL), or free phase contamination, begins to form and displace air and water in the pore spaces.

NAPL, Free Phase Contamination, Free Product

Occasionally, literature uses the term free phase to describe mobile NAPL rather than residual or immobile NAPL. The terms free phase and NAPL are interchangeable as used in Part 201[1] rule provisions regarding necessary interim response actions and Part 201 and Part 213[1] cleanup criteria development. However, free phase contamination or NAPL is not equivalent to free product. Free product is defined under Part 201 and Part 213 as liquid phase material not dissolved in water equal to or greater than 1/8 inch of measurable thickness.

Free phase contamination that migrates to groundwater is generally visible. Observable free phase contamination may exist at less than 1/8 inch of measurable thickness. Free phase contamination in soils may be visible when large amounts are present (e.g., observable product, coal tars), or may be present in soils and not be visible. Therefore, the absence of free product or observable free phase does not confirm the absence of free phase contamination. Consequently, it is inappropriate to install monitoring wells for the purpose of demonstrating the absence of the accumulation of free product in a monitoring well and conclude the absence of free product in the monitoring wells confirms the absence of free phase contamination in soils.

Generic Soil Cleanup Criteria

The C_{sat} values are important to consider when evaluating the potential for free phase contamination to exist. The presence of free phase contamination requires an evaluation of the need for initial response actions or source control.

Certain assumptions and models used in the algorithms to calculate generic soil cleanup criteria are not applicable when free phase contamination is present in soils (see C_{sat} Technical Support Document for additional information). Therefore, C_{sat} becomes the generic criterion when the calculated risk-based soil cleanup value is greater than the C_{sat} concentration for the following pathways: soil direct contact, soil volatilization to indoor air, soil inhalation (ambient air), and soils protective for all groundwater pathways.

Facility-specific C_{sat}

Under specific circumstances there is an opportunity to establish a facility-specific C_{sat} concentration using facility-specific soil characteristics. The Csat Technical Support Document (RRD Operational Memorandum No, Attachment 8) has been revised to provide additional guidance to determine when establishing a facility-specific C_{sat} concentration is appropriate.

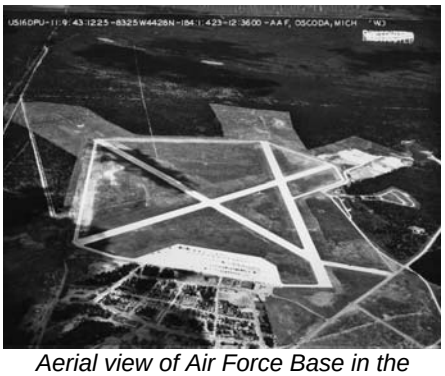
Response Actions to Address Contaminated Soils

A person implementing a response activity must also document whether additional response activity, including interim action, is required to protect against hazards associated with free phase liquids that are not accounted for in the development of the generic criteria such as explosivity, flammability, corrosivity, aesthetic impacts, ecological impacts, acute toxicity, acute inhalation, and acute dermal reaction. Soils contaminated with concentrations in excess of C_{sat} will need to be removed or aggressively remediated to allow closure of the site.

-Article by Patricia Brandt, Part 201 Specialist

LAND TRANSFER PROCESS AND ECONOMIC REDEVELOPMENT SUCCESS AT THE FORMER WURTSMITH AIR FORCE BASE

Kathryn Halvorson, Director of the Air Force Real Property Agency recently wrote to the RRD of DEQ to commend RRD staff members Brad Ermisch, Nan Leeman and Robert Delaney for their assistance in the recent transfer of over 1000 acres of the Former Wurtsmith Air Force Base in Oscoda. She could have also mentioned numerous other RRD staff and DEQ contractors as well for the tremendous effort many have put into facilitating redevelopment of the base.



Aerial view of Air Force Base in the 1950's

When the U.S. Congress and the Department of Defense determined that they needed to close numerous large military bases around the nation, they knew those closures would often have dramatic negative effects on local economies. The 1993 closure of the Wurtsmith Air Force Base in Oscoda was no exception. At its peak, the base housed around 8,300 people. It was by far the biggest employer in the area and numerous businesses near the base depended upon it for their existence. Congress wanted to address this major negative impact to local economies by converting as much of these bases to private and local governmental control as soon as possible. For bases in major metropolitan areas, the conversion process was less challenging than somewhere like Oscoda where the base itself was a major, if not the major, economic force in the area.

The economic redevelopment process at the former base has been a long and bumpy process. The base covered 5,500 acres of land, with 327 buildings including 7 hangers large enough to accommodate B52 bombers. Not only has it been a challenge to find businesses that can reuse such facilities, but the transfer of property has been complicated by environmental concerns left over from the operations of what was a major military facility. Military facilities, such as Wurtsmith Air Force Base, created all the contaminant problems that you would find at any small city with a major industrial complex. For example, there are several landfills on the base, large numbers of above and below ground storage tanks (many of which leaked), spills, lagoons, septic fields, incinerators and fire training facilities. These operations resulted in the typical problems of soil, groundwater and surface water contamination. Added to those problems however, are the uniquely military type environmental problems. Large areas of the base were impacted by unexploded ordnance that any redevelopment plan must account for. Also, military materials include some unique chemicals that are not found in a typical urban or industrial setting.

Crushed sign from the Wurtsmith landfills

Although there have been extensive remedial investigations, starting in the late 1970s and continuing on to today, regulators and the Air Force have had to deal with a lot of uncertainty. Virtually every part of the base has been covered by remedial investigations, but just the size of the base and its long and varied operational history, make it impossible to guarantee that every environmental problem has been identified to date. However, the need to move ahead with redevelopment challenged everyone involved to find ways to safely transfer property, taking into account the known environmental problems and the uncertainties associated with the individual properties.

To make it possible to achieve safe transfers of the property, RRD Level of Effort (LOE) contractors at DLZ, Inc., and later at STS, Inc., created a geographic information system project consisting of a map of all 139 properties that the Air Force wanted to transfer. Overlaying the property map are maps of known environmental problems, building foot prints and zoning maps. Backing up all that information was a database containing information on every building on the site with its historic military purpose, and the hazardous chemical usage in the building. Using the maps and database together, any parcel that the Air Force wants to transfer can quickly be analyzed for known and potential unknown chemical or munitions risks.

Test pitting at Wurtsmith landfills summer of 2006

Finally, by looking at the intended use of the property and remedial actions at a property, choices in land use restrictions can be made to protect future occupants from risks both known and potential. Teaming together with the RRD and the U.S. EPA staff, the Air Force designed presumptive remedies, using deed restrictions and permanent markers, to address many potential risks at properties. Thus, the Air Force is seeking to ensure that the properties will not be used in ways that might put people at risk.

The Air Force acknowledged the innovative and dedicated work of RRD staff, typified by the recent transfer of 1000 acres of the base to local authorities. The LOE contractors at DLZ and STS for RRD need also be acknowledged for the outstanding work they have done in helping foster safe redevelopment of the base.

Ninety percent of the base has now been transferred and is back into productive use.