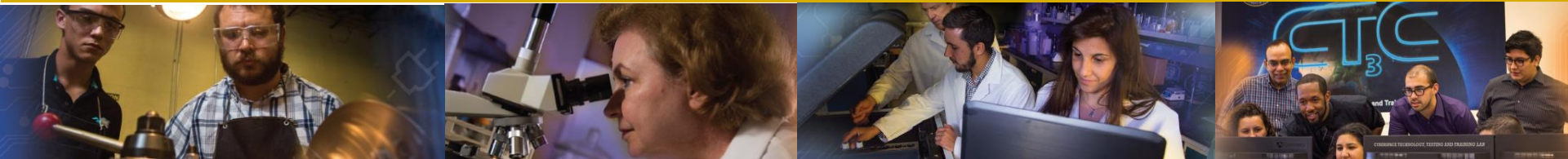




D&D KM-IT, Native Fixative App, and WIMS

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DOE-FIU Science and Technology Workforce Development Program
Applied Research Center
Florida International University





Project Tasks

- D&D Knowledge Management Information Tool (D&D KM-IT)
- Native Fixative App
- Waste Information Management System (WIMS)



Background of D&D KM-IT

FIU
Applied Research
Center

- Web-based system developed to maintain and preserve deactivation and decommissioning knowledge across the U.S. Department of Energy complex
- Developed to enhance safety through efficiencies by promoting reuse of existing knowledge

The screenshot shows the D&D KM-IT website interface. At the top, it displays the title "D&D KM-IT" and the subtitle "Deactivation & Decommissioning Knowledge Management Information Tool". A search bar is located in the top right corner. Below the title, there are navigation tabs for "Home", "Contribute", "About", and "Contact". A "Welcome Guest" message and a "Login" button are also present. The main content area features a large map of the United States with the text "Powered by the Global D&D Community". Below the map, there is a grid of modules including "Hotline", "Technology", "Web Crawler", "Mobile System", "Lessons Learned", "Best Practices", "Picture Video Library", "Document Library", "Specialist Directory", "Vendors", "Collaboration Tools", and "Training". A registration prompt is visible: "Please register to access all of the features of D&D KM-IT." with buttons for "U.S. Registration" and "International Registration". The "Additional Features" section includes "Fixative Module", "ITSR Module", "ICM Demo at FIU", "Search SRS ISSC Reports", and "Prioritization Tool". A "Quick Links" section lists "DOE EM D&D", "SRS ISSC", "ALARA Center", and "EFCOG". The bottom section features a "Robotics Technologies" banner, an "Industry News" section with articles about waste management and DOE fellows, and a "Contribute" section with the text "Share your knowledge and experience through D&D KM-IT."



D&D Vendors / Technologies



KM-IT currently includes:

- 1386 technologies
- 956 vendors
- 1017 registered users
- 103 subject matter specialists

D&D KM-IT
Deactivation & Decommissioning Knowledge Mar...
Home Contribute About Contact More Modules
Technology Search Advanced Search Help
Welcome Guest Login

Technology

A database of robotic technologies, originally developed by NuVision/Cogentus, has been integrated into the D&D KM-IT framework within the Technology module. All of the data from the original database and accompanying information (photos, documents, and videos, etc.) are being made available on D&D KM-IT. Simply use the Technology Advance Search feature and select "Robotics" from the "Group" pull-down menu to browse these new robotic technology entries. Click the image below to view Robotics Technologies.

Search Technologies
Start searching the Technology module.

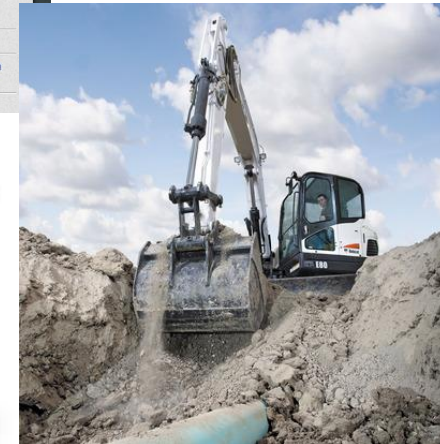
[Start Your Search Now](#)
[View Robotics Technologies](#)
[View All Technologies](#)

Popular Technologies

- Robotics Technologies
- Dyneema Long Sleeve Crew Neck
- Porter-Cable Circular Saw with Vacuum System
- ADAMANT Twin Blade Cutter Circular



The AscTec Hummingbird





Content Management



- Search for technologies that fit the criteria of the website
- Send a preliminary list of technologies for review for applicability
- Continue to add vendors/ technologies and update existing

D&D KM-IT Mobile: m.dndkm.org Search the D&D KM-IT

Deactivation & Decommissioning Knowledge Management Information Tool

Home Contribute About Contact **More Modules** Welcome akos2001

Technology Search Advanced Search Technology Help

Technology > Approval Share page:

Technology Approval

Technology Name	Description	Entered		
ABC	NA	10/27/2016	View	Approve
Air Monitors	The Model 334AB is designed to function both as a portable workplace monitor or as a continuous air	4/14/2017	View	Approve
Alpha Detectors	Ludlum Measurements has a wide selection of detectors and detector accessories available to match wi	4/21/2017	View	Approve
Alpha/Beta Detector	Model 43-1-1 part number 47-2336 m43-1-1 angle • scintillator • window 75 cm ² open • e	4/21/2017	View	Approve
Alpha/Beta/Gamma Detectors	Model 44-7 part number 47-1536M44-7 • GM, halogen-quenched • window 6 cm ² active • efficiency	4/21/2017	View	Approve
ArcTech	The products from the KUKA.ArcTech family are designed to turn the Kuka robot into a welding expert.	5/1/2017	View	Approve
Area Monitor Controller	Introduction The Model 375 is a versatile, compact, and very affordable digital electronic cont	4/7/2017	View	Approve
Beta Detectors	Model 44-1 Part Number 47-1531 M44-1 c-window • scintillator • window area 9.7 cm ² active • eff	4/21/2017	View	Approve
Blueprint SeaTrac USBL	The Blueprint SeaTrac USBL is capable of simultaneously tracking asset positions and undertaking bi-	5/10/2018	View	Approve
Contamination Monitors	Hand & Foot - Gas Proportional Model 4906 Series M4906 The Model 4906-Series are low-cost, in	4/21/2017	View	Approve
DELETE	The LBR iiwa is the world's first series-produced sensitive, and therefore HRC-compatible, robot. LB	4/28/2017	View	Approve



Technology Fact Sheet

Examples of information displayed includes:

- Description
- Vendor
- Benefits
- Comments
- Limitations
- Pictures / videos
- Associated links & documents
- Demonstrations

Technology Search Advanced Search Help

Go B Share page:

Technology Factsheet

Adept Cobra s800

Category: Robotics > Other > Industrial Robot
Reference # : Model No :

The Adept Cobra™ s800 is a high-performance selective compliance articulated robot arm (SCARA) robot system for mechanical assembly, material handling, packaging, machine tending, screw driving, and other applications that require fast and precise automation.

Benefits


- Adept ACE™ software with a user-friendly interface.
- High-resolution, absolute encoders to provide high accuracy, superior slow-speed following, and easy calibration.
- High-efficiency, low-inertia Harmonic Drives™ and a lightweight arm to deliver maximum acceleration.
- 8 kHz servo update rate to improve path following and control.
- Diagnostics display enables faster troubleshooting.
- Ethernet TCP/IP capability to control the robot through a PC, PLC, or controller.
- Complete interchangeability between robots and controllers.

Limitations

Comments

The Adept Cobra s800 robot comes with the high-performance Adept SmartController motion controller, which is based on the Adept SmartServo architecture. It has a small footprint of 329w x 187d x 86h mm.

Pictures



Cobra s800

Videos

Vendor

Omron Adept Technology, Inc.

Documents

Title:
[Cobra s800-09366-010 Rev. D.pdf](#)
 (Posted: 12/14/2017)
 Description: Cobra s800 Datasheet

Demonstrations



D&D KM-IT Native Fixative App

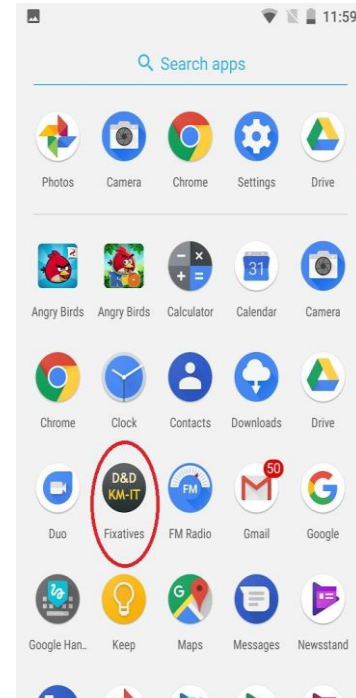




Features and Compatibility



- Includes a comprehensive database of commercially available fixatives and other contamination control products and is capable of filtering and sorting the available products according to the criteria entered by the user
- App has been developed for:
 - Android
 - IOS
 - Windows

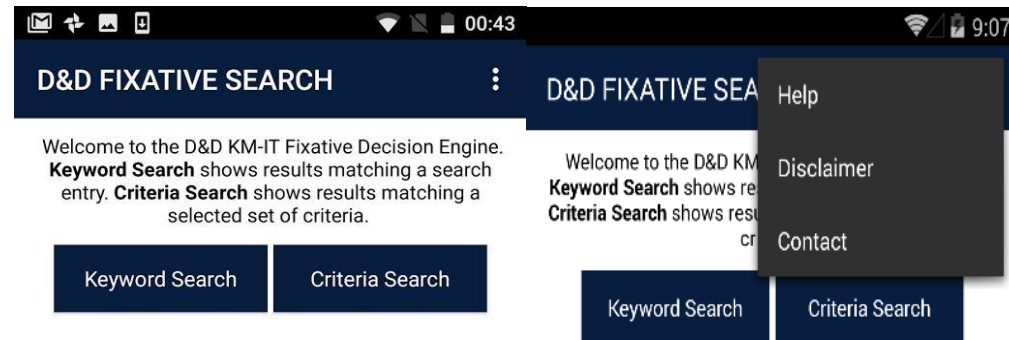




Home Screen



- Welcome screen
- Users can choose to proceed by performing a Keyword Search or Criteria Search
- Mobile menu shows other activities for the user

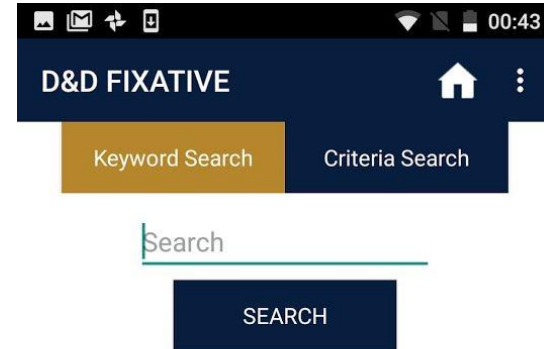


This Fixatives mobile app can assist in the selection of fixatives, strippable coatings, and decontamination gels for application during Deactivation and Decommissioning activities. The app includes a comprehensive database of commercially available fixatives.



Keyword Search

- Will search for fixative products according to the search word
- If no search keyword is entered and the search button is clicked, it will return all fixative products to the user



Search fixatives by keyword. This feature searches the fixative by name, description, usage, advantages, vendor and more.



Criteria Search



- Criteria search allows the users to build multi-tier criteria searches for fixative products by adding criteria and sub criteria

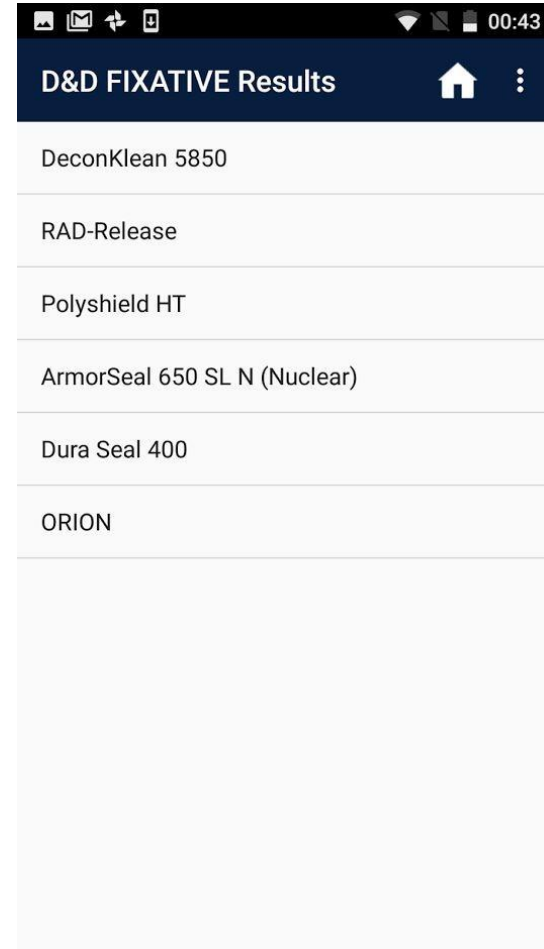
The screenshot shows a mobile application interface for "D&D FIXATIVE". At the top, there is a navigation bar with a home icon and a menu icon. Below the navigation bar, there are two buttons: "Keyword Search" and "Criteria Search". The "Criteria Search" button is highlighted. Below the buttons, there is a text prompt: "Select up to 3 criteria levels. Use the buttons below to add/remove criteria." Below this prompt, there is a dropdown menu labeled "Please Select Criteria". Below the dropdown menu, there are two buttons: "(+) Add Criteria" and "(-) Remove Criteria". Below these buttons, there is a large "SEARCH" button. Below the "SEARCH" button, there is a large empty white box, likely for displaying search results.



Results



- After a keyword search, the app displays a summary of the search results by the name of the fixative products
- Clicking on any of the result options will send the user to the details of the fixative product





Fixative Product Details

- After clicking on a product from the search results, the user can view the details of the fixative product
- This view provides general details of the product with an option to view the product and vendor data by clicking on the corresponding buttons
- The mobile app allows for communication by phone when a phone number is clicked and by phone browser when an URL is clicked

The screenshot shows a mobile application interface for 'D&D FIXATIVE Details'. At the top, there is a status bar with icons for signal, Wi-Fi, and battery (79%), and the time 11:46 AM. Below the status bar is a dark blue header with the title 'D&D FIXATIVE Details', a home icon, and a menu icon. Underneath the header are three tabs: 'Summary', 'Product Data', and 'Vendor Data'. The main content area displays the product name 'DeconPeel 2640' and a 'Product Summary' section. The 'Instructions' section describes the product as a water-based peelable coating for the nuclear power plant industry, detailing application methods and drying times. The 'Product Use' section explains its application for protecting metals from corrosion. The 'Previous Use' section is marked as 'NA'. The 'Advantages' section lists its biodegradable, non-flammable, and resistant properties. Finally, the 'Product URL' section provides a link to the product page on the Strippable Coating website.

D&D FIXATIVE Details

Summary Product Data Vendor Data

DeconPeel 2640

Product Summary

Instructions
 DeconPeel 2640 is a water-based peelable coating meant for the nuclear power plant industry. It should be used as received. It can be applied by an airless sprayer (recommended tip size is 0.070), a roller or a brush and applied to form a dry film in the range of 5 to 10 mils. It requires approximately 1 to 3 hours drying time depending on film thickness.

Product Use
 This product is used where a water resistant coating is required to protect metals from corrosion, paint overspray, or other particles. It can be used to protect various types of surfaces and works best on metals.

Previous Use
 NA

Advantages
 DeconPeel 2640 is biodegradable/non-flammable. It has neutral pH and it can be easily applied and removed. Once cured, this product is water resistant, alkali resistant, and heat resistant. This product is stabilized against brittleness and will not be softened or penetrated by solvent-based paints.

Product URL
<http://www.strippablecoating.com/products/>



Fixative Product Data

- After pressing the product data button, the user is taken to the product data available for this particular fixative product.

A screenshot of a mobile application interface. The top status bar shows signal strength, Wi-Fi, and battery at 78% at 11:47 AM. The app title is "D&D FIXATIVE Details" with a home icon and a menu icon. Below the title are three tabs: "Summary", "Product Data" (which is highlighted in orange), and "Vendor Data". The main content area displays "DeconPeel 2640" followed by a "Product Data" section. The data includes: Combustion: Non-Flammable; Coverage: 200 sqft/ gal at 8 mils; PH: 7-8; Ingredients: SG: 1.03-1.05; Viscosity: Solubility In Water: Soluble; Volatile Percentage: Incompatibility: Acids and Alkalinity; Conditions To Avoid: Freezing and excessive heat.; Hazardous Decomposition: In the presence of air may yield carbon monoxide and/or carbon dioxide when heated; HMIS Rating: Health 0 - Flammability 0; Thickness: Density: 8.79 lbs/gal.



Vendor Data



- After pressing the vendor data button, the user is taken to the vendor data available for this particular fixative product.
- Again, the mobile app allows for communication by phone when a phone number is clicked and by phone browser when an URL is clicked.

The screenshot shows a mobile application interface for 'D&D FIXATIVE Details'. At the top, there is a status bar with icons for signal, Wi-Fi, and battery (70%), and the time 12:55 PM. Below the status bar is a dark blue header with the text 'D&D FIXATIVE Details', a home icon, and a menu icon. Underneath the header are three tabs: 'Summary', 'Product Data', and 'Vendor Data', with 'Vendor Data' being the active tab. The main content area is titled 'Rust Doctor' and contains the following information:

Vendor Details
 The Rust Doctor
 PO Box 3403
 1065 Benson Way, Suite 9
 Ashland, Oregon United States
 Phone: [800-460-6167](tel:800-460-6167)
 Toll Free: [800-460-6167](tel:800-460-6167)
 FAX: [866-880-6625](tel:866-880-6625)
 Email: info@therustdoctor.com
 Website: rustdoctor.com

Description:
 The Rust Doctor provides solutions for safe rust repair. Products include Rust Doctor for rust repair and Grease Doctor, a water-based cleaner/degreaser.

Areas of Expertise:
 Fixatives & Coatings
Other

 Rust repair.
 Comments:



About Page

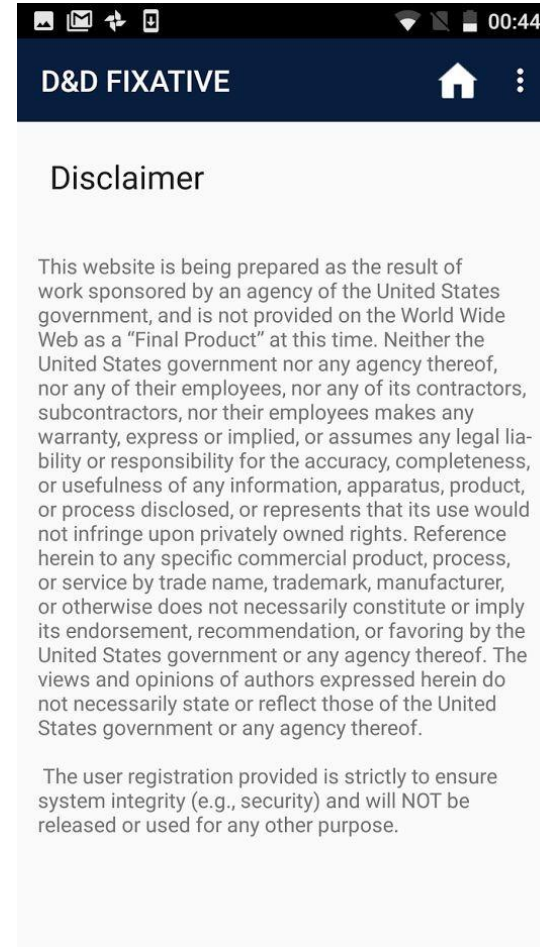
- Provides the user with a description of the D&D KM-IT system.
- Provides contact information for FIU ARC.





Disclaimer

- The disclaimer view allows the user to read the general disclaimer message displayed on the D&D KM-IT website





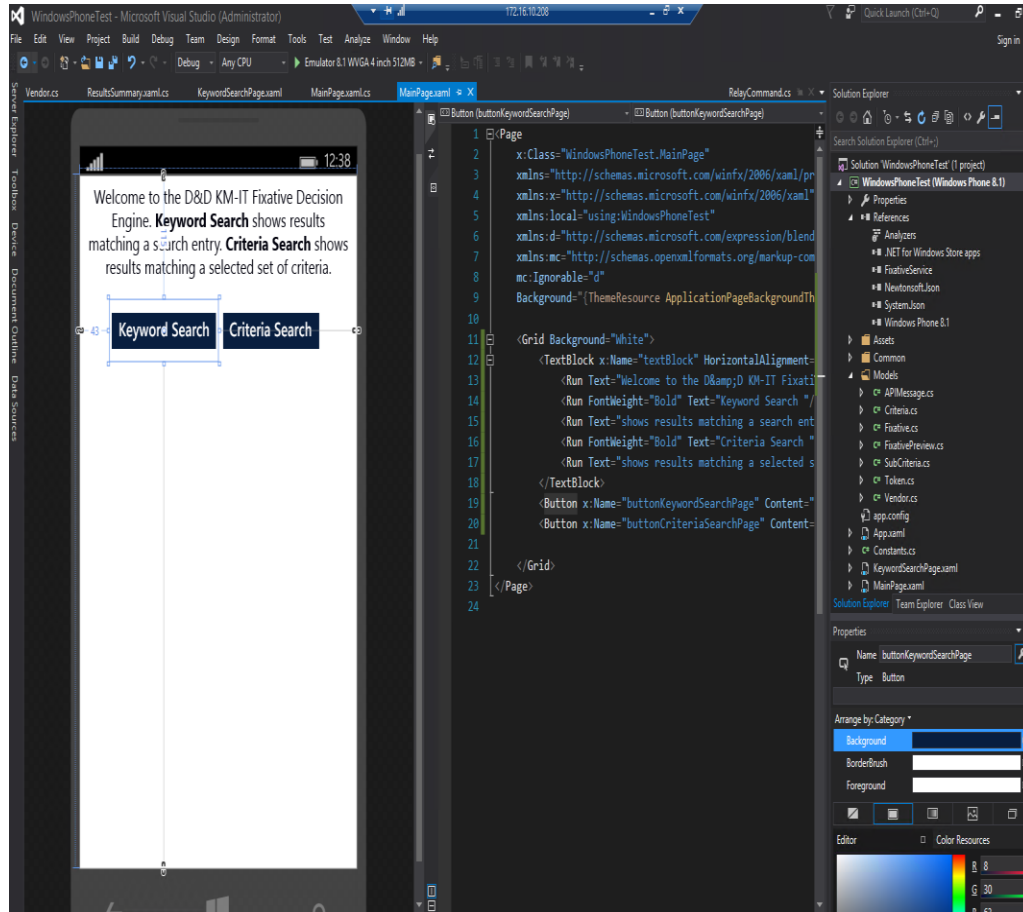
Help

- Displays fixative help questions and answers.





Tools and Technologies for Mobile App Development



Microsoft SQL Server





Feedback

- A simple to use form was developed to receive feedback from users on their experience with the app and how we can better improve the user experience.

D&D Android Fixative Mobile App

Please submit feedback regarding the experience you had with the D&D KM-IT Android Fixative Mobile Application, including feedback on process of installation, content, and findings.

*** Required**

What brand and model is your device *
If you need help, Go to Settings -> About Phone/Device

Your answer

What version of Android does your device have? *
If you need help, Go to Settings -> About Phone/Device

Your answer

How do you rate the installation process on your device?
Please consider the initial email with download link and the user installation guide provided.

1 2 3 4 5

Easy Difficult

Which DOE site are you located?

INL
 SRNL
 ANL
 Other:

How did you use the Application? *

Mobile Data
 Wi-Fi network
 Other: _____

Rate the Application *
Select 1 for Excellent to 5 for poor

1 2 3 4 5



Background for the Waste Information Management System (WIMS)



- Online system to gather, organize, and present waste forecast data from DOE sites
- Easy-to-use tool to visualize and understand the forecasted DOE waste streams across the complex



Welcome to WIMS Waste Information Management System

Receives, organizes, and displays DOE waste forecast data
Automatically generates DOE waste disposition maps
Automatically generates DOE waste pathway GIS maps

WIMS new web address: <http://www.emwims.org>

WIMS is developed to provide DOE Headquarters and site waste managers with the tools necessary to easily visualize, understand, and manage the vast volumes, categories, and problems of forecasted waste streams.

WIMS meets this need by providing a user-friendly online system to gather, organize, and present waste forecast data from DOE sites. This system provides a method for identification of waste forecast volumes, material classes, disposition pathways, and potential choke points and barriers to final disposition.

Disclaimer: Disposition facility information presented is for planning purposes only and does not represent DOE's decisions or commitments. Any selection of disposition facility will be made after technical, economic, and policy considerations. In most cases, data set reflects sites' planning data as of 4Q FY 2017

Have additional questions? [Contact Us](#)

Created by [Florida International University's Applied Research Center](#) for the [U.S. Department of Energy](#)





Forecast Data

- 722 records
- Current year through 2050

Waste Information Management System

Home | Contact Us | Help | Profile | Logout

Welcome **alejandra koszarycz** to WIMS

Forecast Data | Disposition Map | GIS Map | Transportation | Reports

Waste from:

Waste to:

Fiscal Year: From To Waste Type:

Display Forecast Data

Waste forecast to be disposed from All Sites to All Facilities for All Materials Material(s) in m³ (Fiscal Year: 2018 --2048To 2050)

Row No	Reporting Site	Disposition Facility Name	Waste Stream Name	Field Stream ID	Managing Program	Classified Flag	Waste Type	Treatment	Physical Form
1	Ames	Energy Solutions-Clive (formerly Envirocare)	Contaminated Equipment & Debris	8020-01	Science	No	Low Level Waste	None	Debris Waste
2	Argonne	Energy Solutions-Clive (formerly Envirocare)	331 D&D LLW	331 D&D LLW	Environmental Management	No	Low Level Waste	Sort/Segregate	Solids
3	Argonne	Energy Solutions-Clive (formerly Envirocare)	212 D&D LLW	212 D&D LLW	Environmental Management	No	Low Level Waste	Sort/Segregate	Solids
4	Argonne	Energy Solutions-Clive (formerly Envirocare)	306 D&D LLW	306 D&D LLW	Environmental Management	No	Low Level Waste	Sort/Segregate	Solids
5	Argonne	Energy Solutions-Clive (formerly Envirocare)	202 D&D LLW	202 D&D LLW	Environmental Management	No	Low Level Waste	Sort/Segregate	Solids
6	Argonne	Energy Solutions-Clive (formerly Envirocare)	IPNS D&D LLW	IPNS D&D LLW	Environmental Management	No	Low Level Waste	Sort/Segregate	Solids
7	Argonne	Energy Solutions-Clive (formerly Envirocare)	200 D&D MA/MB LLW	200 D&D MA/MB LLW	Environmental Management	No	Low Level Waste	Sort/Segregate	Solids
8	Argonne	Energy Solutions-Clive (formerly Envirocare)	LLW Aqueous Liquids	LLW Aqueous Liquids	Science	No	Low Level Waste	Stabilization/Solidification	Aqueous Liquids/Slurries
9	Argonne	Energy Solutions-Clive (formerly Envirocare)	LLW General Solid	LLW General Solid	Science	No	Low Level Waste	Sort/Segregate	Solids
Row No	Reporting Site	Disposition Facility Name	Waste Stream Name	Field Stream ID	Managing Program	Classified Flag	Waste Type	Treatment	Physical Form
10	Argonne	Energy Solutions-Clive (formerly Envirocare)	205 D&D LLW	205 D&D LLW	Environmental Management	No	Low Level Waste	Sort/Segregate	Solids
11	Argonne	Energy Solutions-Clive (formerly Envirocare)	B350 D&D LLW	B350 D&D LLW	Environmental Management	No	Low Level Waste	Sort/Segregate	Solids

Disclaimer: Disposition facility information presented is for planning purposes only and does not represent DOE's decisions or commitments. Any selection of disposition facility will be made after technical, economic, and policy considerations.

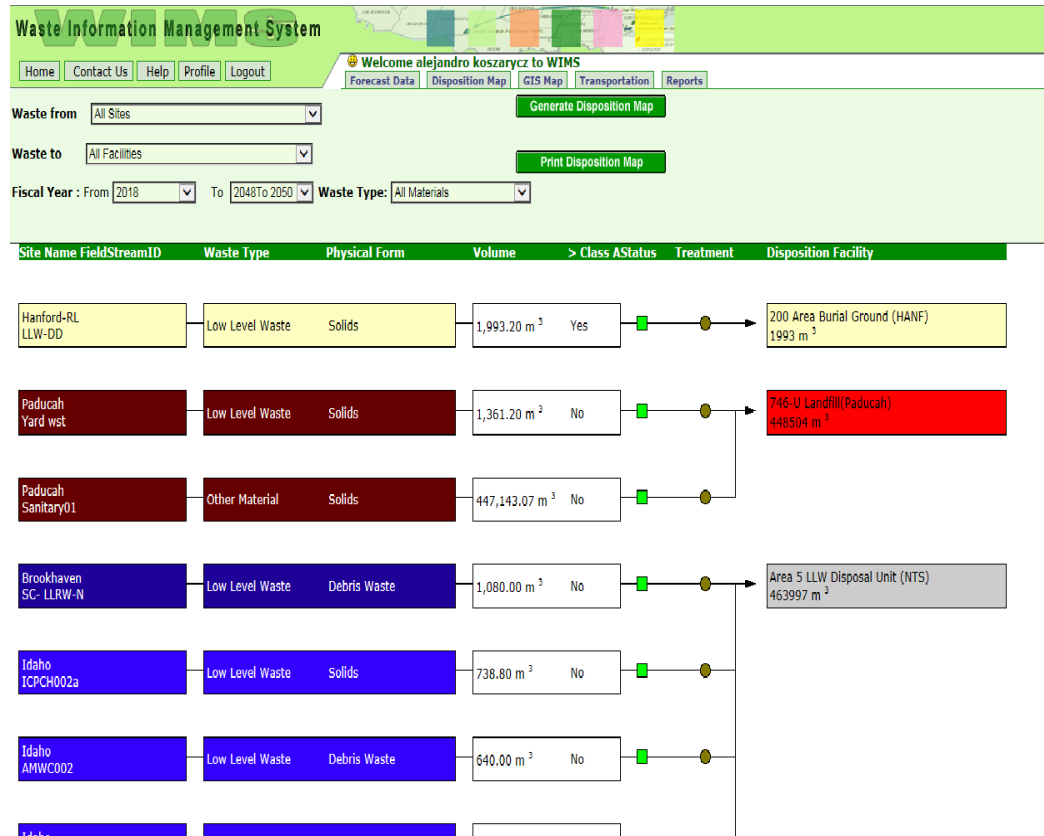


©Copyright 2018



Disposition Map

- Graphical display of site name, waste type, physical forms of waste, volume, and disposition facility.
- Site specific color matches color displayed in GIS map.

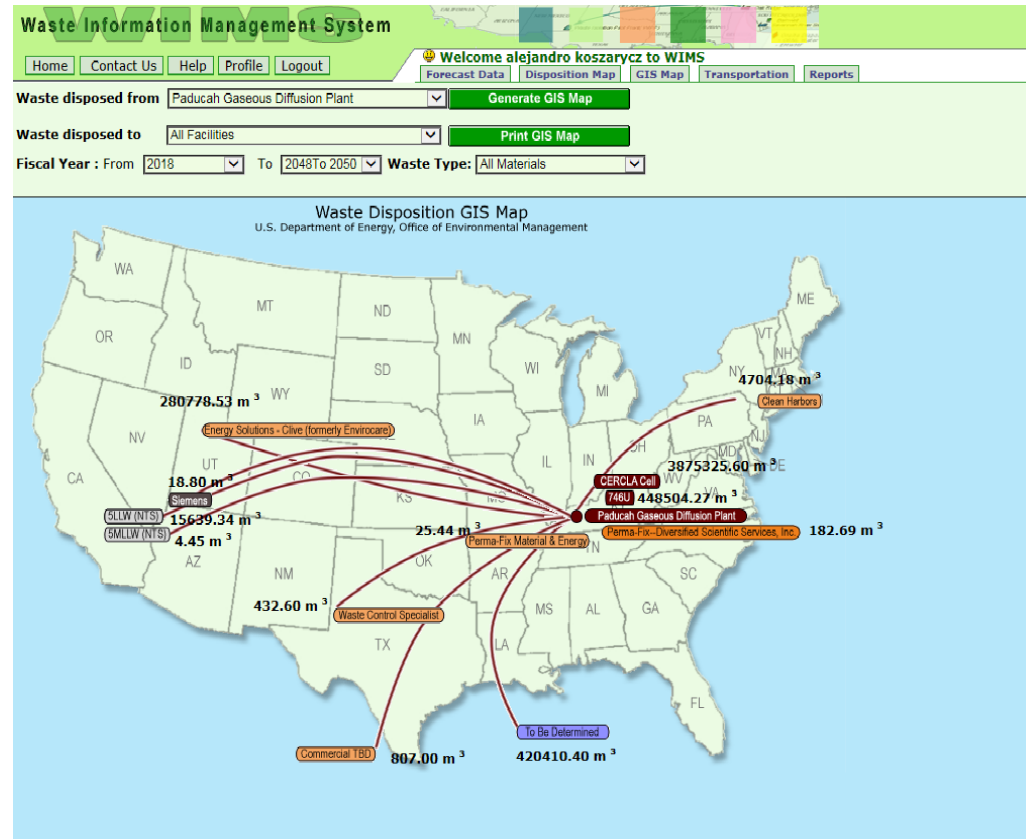




Geographic Information System (GIS)



- Map view display of waste forecast volumes from the disposition site with arrows pointing to the planned treatment / disposal location





Transportation Forecast



- Shipping waste forecast information by rail, truck, and intermodal shipments
- Limited to the next 2 years

Waste Information Management System

Welcome **alejandro koszarycz** to WIMS

Forecast Data | Disposition Map | GIS Map | Transportation | Reports

Waste from:

Waste to:

Waste Type:

Shipping information for the Waste forecast to be disposed from Paducah Gaseous Diffusion Plant to All Facilities for All Materials Material(s) (Fiscal Year: 2018 - 2048 To 2050)

Row No	Reporting Site	Disposition Facility Name	Waste Stream Name	Field Stream ID	Waste Type	Rail 2018	Truck 2018	Intermodal 2018	Rail 2019	Truck 2019	Intermodal
1	Paducah	746-U Landfill (Paducah)	Yard Waste (concrete and wooden chocks)	Yard wst	Low Level Waste						
2	Paducah	Area 5 LLW Disposal Unit (NTS)	SWMU 4 Sol/Debris	SWMU4LLW	Low Level Waste						
3	Paducah	Area 5 LLW Disposal Unit (NTS)	Classified New Generated Debris/Metals	SolidLLW3	Low Level Waste						
4	Paducah	Area 5 LLW Disposal Unit (NTS)	LLW Debris	LLW DEBRIS	Low Level Waste	0	3	0	3	3	0
5	Paducah	Area 5 LLW Disposal Unit (NTS)	DBO/ER/NGW LLW debris	DebrndLLW9	Low Level Waste						
6	Paducah	Area 5 LLW Disposal Unit (NTS)	Trap Mix	DeactTrapMix	Low Level Waste	0	2	0	0	0	0
7	Paducah	Area 5 MLW Disposal Cell (NTS)	Rad Sealed Sources	Sealed Sources	Low Level Waste	0	1	0	0	0	0
8	Paducah	Paducah CERCLA	Onsite Disposal Facility	OSDFLLW	Low Level Waste						
9	Paducah	Commercial TBD	Nickel Ingots	Metal Ingots	Low Level Waste						
Row No	Reporting Site	Disposition Facility Name	Waste Stream Name	Field Stream ID	Waste Type	Rail 2018	Truck 2018	Intermodal 2018	Rail 2019	Truck 2019	Intermodal
10	Paducah	Energy Solutions-Clive (Formerly Envirocare)	C-400 Remedial Actions LLW PS	LLW 400 RA	Low Level Waste						
11	Paducah	Energy Solutions-Clive	SWMU 2 & 3 Well	SoiLLW01	Low Level						



Reports



- Allows user to have access to reports in multiple formats
- Downloadable

The screenshot shows the "Waste Information Management System" interface. At the top, there is a navigation bar with links for Home, Contact Us, Help, Profile, and Logout. A welcome message reads "Welcome alejandro koszarycz to WIMS". Below this are tabs for Forecast Data, Disposition Map, GIS Map, Transportation, and Reports. The main content area displays four report options, each with an icon and a "View Report" button:

- Transportation Forecast Report**: This report shows shipping information for waste forecast through rail, road and intermodal transportation. The information can be downloaded in multiple format like PDF, Excel, CSV, XML and more.
- Waste Stream Report**: This report shows waste stream information and year wise waste volume data. The information can be downloaded in multiple format like PDF, Excel, CSV, XML and more.
- Waste Stream Info Report**: This report prints waste stream related information. The information can be downloaded in multiple format like PDF, Excel, CSV, XML and more.
- Waste Stream Forecast Report**: This report prints waste volume data information. The information can be downloaded in multiple format like PDF, Excel, CSV, XML and more.



Conclusions

- KM-IT has been developed for DOE's D&D community of practice and has a long-term strategic vision to *mature into a self-sustaining system through the active participation of the EM community it was designed to serve*
- Helps distribute existing knowledge to reduce “reinventing the wheel”
- Defines, stores, categorizes, indexes and links digital information to allow searching for relevant content and presenting the content with sufficient flexibility in order to render it meaningful and applicable across multiple contexts of use



Acknowledgements

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