



UPDATE OF MMR MODELING ACTIVITIES

Jay Clausen (AMEC)

Presented at the 2/5/02 IAGWSP Modeling meeting to the USEPA, MADEP,
USACE, NGB, USGS, Jacobs Eng, and AEC (IAGWSP Contact Dave Hill 508-968-5621).

TODAY'S AMEC PRESENTATIONS

- Schedule of Modeling Activities 2002 - Jay Clausen
- Application of HELP Model to Demo 1 - Jacob Zaidel
- Development of Central Impact Area Subregional Model - Jacob Zaidel
- Use of Optimization Modeling for Demo 1 Well Field Design - Al Laase
- Assessing the Impact of Transient Flow at J Ranges - Bruce Jacobs

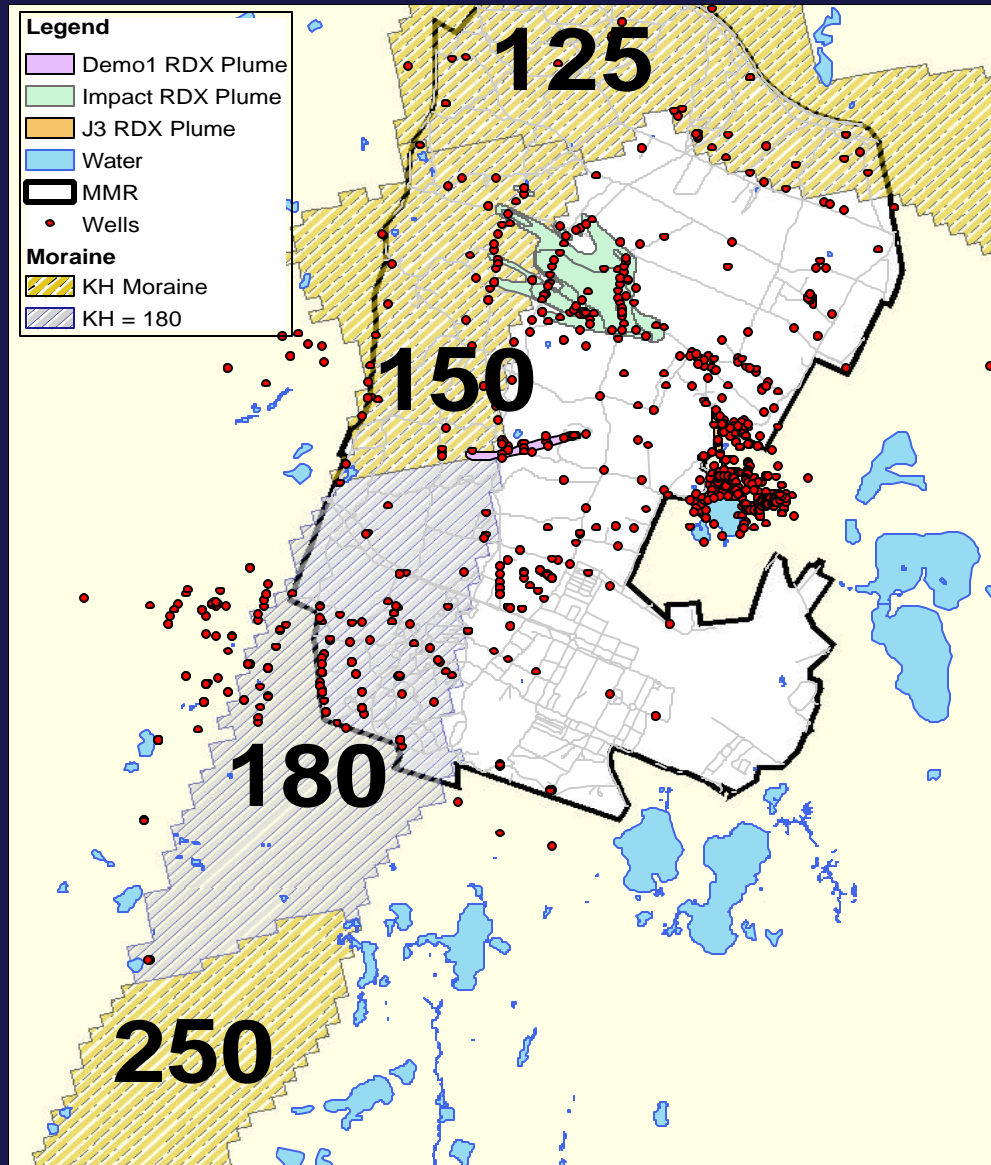
WHAT AMEC HAS ACCOMPLISHED IN THE LAST 6 MONTHS

- Completed development of Demo 1 Subregional Groundwater Flow-and-Transport Models
- Conducted vadose zone modeling for Demo 1, Gun and Mortar Positions, and Central Impact Area
- Responded to numerous particle track requests
- Begun refinement of Zones of Contribution (ZOCs) with AMEC Regional Model, MMR-8
- Started development of Central Impact Area and J Range Models

SUMMARY OF REGIONAL MODEL MODIFICATIONS

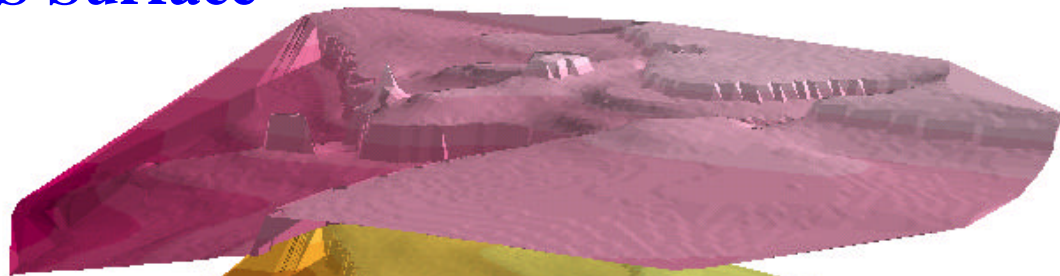
Regional Model	Modifications	Importance for Demo 1 Area
MMR-6	Increased K-Values in Southern Half of BBM	High
MMR-7	Updated Depth to Rock in Central Impact Area, Demo 1 and J Ranges	Low
MMR-8	Improved Representation of the Snake, Weeks, Wakeby and Mashpee Ponds	Low

HYDRAULIC CONDUCTIVITY CHANGES

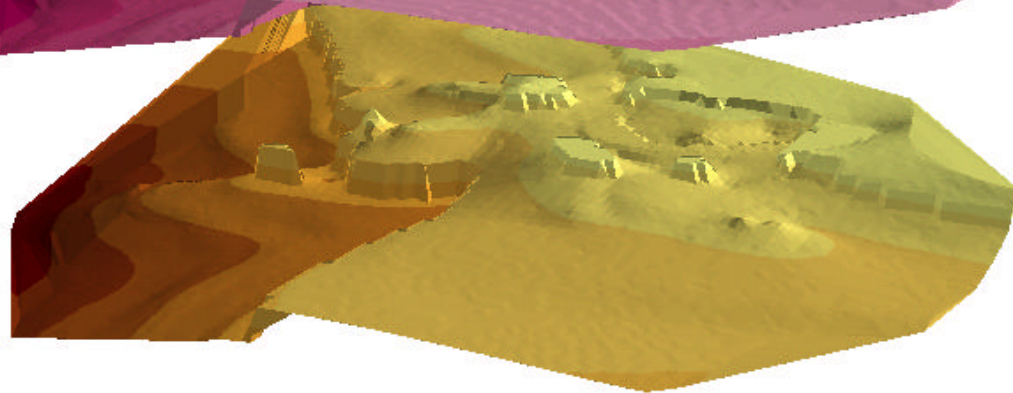


COMPARISON BETWEEN BEDROCK SURFACES

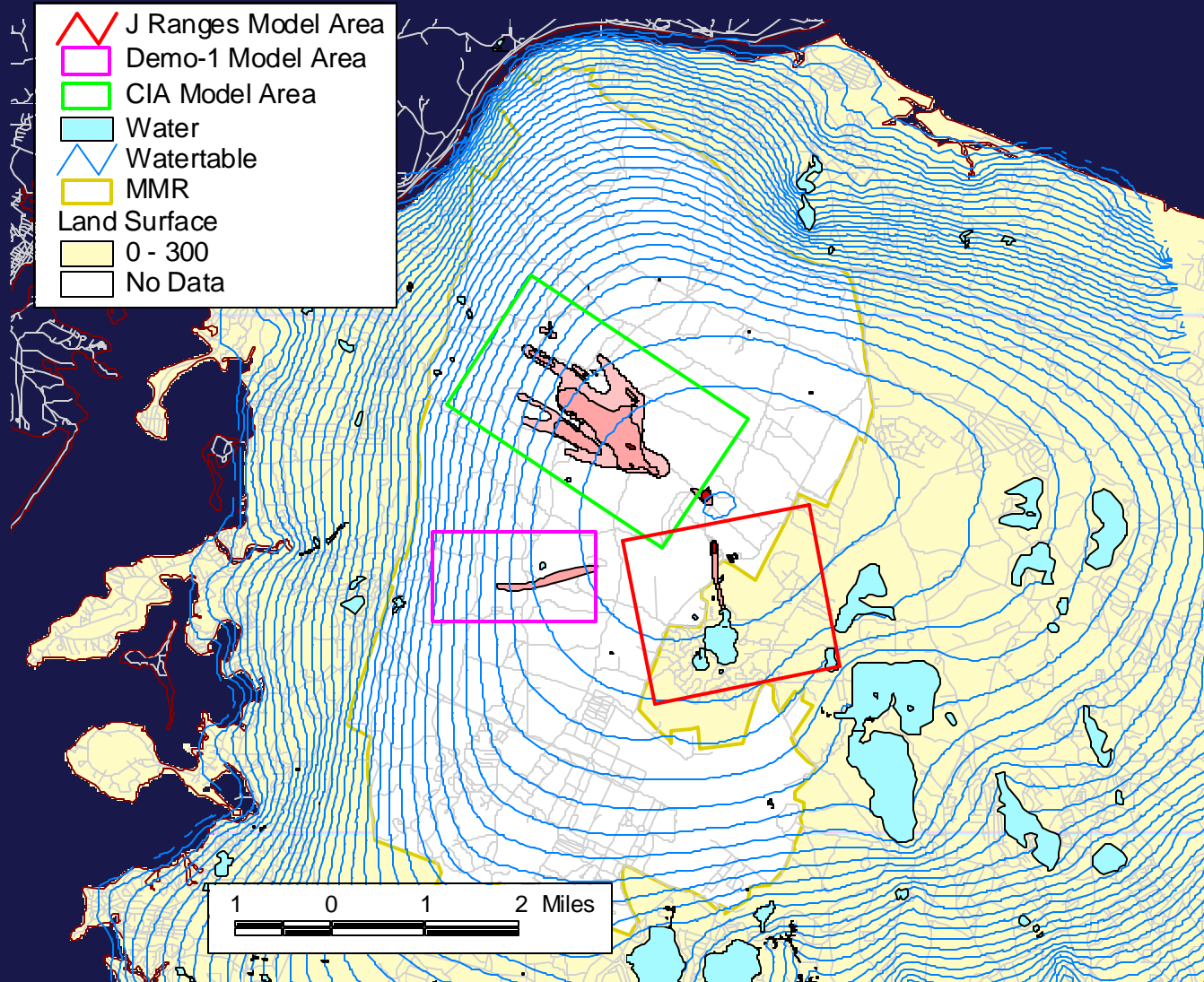
USGS Surface



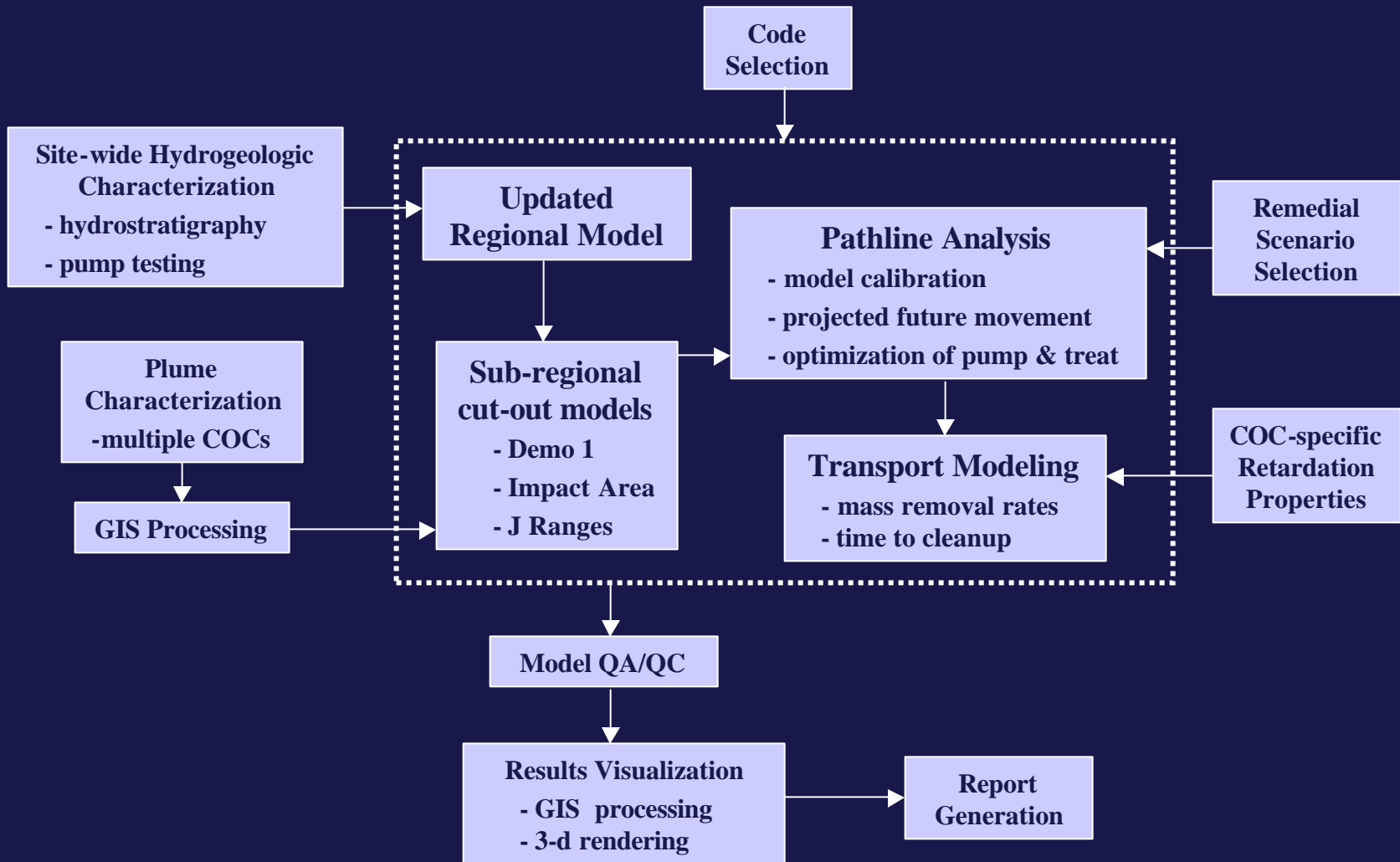
New AMEC Surface



SUB-REGIONAL MODEL GRIDS



MMR SATURATED ZONE MODELING PROCESS



MODELING ACTIVITIES FOR NEXT 6 MONTHS

- Continue development of 2000 and 2020 Zone of Contribution (ZOC) conditions
- Conduct particle tracking as needed
- Complete Central Impact Area and J Range Subregional model development
- Redo Unsaturated Zone Modeling for Central Impact Area
 - consistent with Demo 1 and G&M methodology
 - update with new Univ. of Texas fate-and-transport results

MODELING ACTIVITIES FOR NEXT 6 MONTHS (Continued)

- Prepare report documenting all model development for all operable units
- Conduct fate-and-transport modeling with Central Impact Area Subregional Model to support Feasibility Study
- Update AMEC Regional Flow Model with Central Impact Area aquifer test information and revise hydraulic conductivity based on IAGWSP lithologic logs

SCHEDULE OF MODELING ACTIVITIES FOR 2002

- Draft Final Central Impact Area Soil Report –vadose zone modeling – 08-20-02
- Draft FS Central Impact Area GW Report – GW F&T modeling – 07-30-02
- Draft Final J1/J3/L Report – GW F&T modeling – 09-19-02
- Draft Groundwater FS Southeast Area – GW F&T modeling – 01-05-04
- Remedy Selection Plan Demo 1 – GW F&T modeling – 06-25-02
- Draft Training Areas Report – vadose zone modeling – 09-10-02