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NAS PENSACOLA
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PARTNERING TEAM MEETING MINUTES BETWEEN 16 JUNE AND 17 JUNE 2009 NAS
PENSACOLA FL
6/16/2009
NAS PENSACOLA

NAS Pensacola Partnering Team Meeting Minutes
June 16th & 17th, 2009
Tallahassee, Florida

ATTENDEES:

Team Members:

Patty Marajh-Whittemore	NAVFAC
Greg Fraley	USEPA
Greg Wilfley	CH2M Hill
Greg Campbell	NASP PWD
Gerry Walker	TtNUS
Allison Harris	Ensafe
Brian Caldwell	Tetra Tech
Tracie Bolaños	FDEP

Support Members:

Nancy Rouse	The Management Edge - Facilitator
Yarissa Martínez	TtNUS – Scribe
Ron Kotun	TtNUS
Patrick Owens	NAVFAC (Day 1)
Keith Henn	TtNUS (Day 2)
Peggy Churchill	TtNUS, (Day 2)
John Schoolfield	NAVFAC (Day 2)

1. 1st Day Check In/Opening Remarks/Resource Sharing/Head Count and Proxies/Guests/Review Ground Rules /Review Consensus Items & Action Items & Parking Lot/Approve Minutes 8:30 – 9:20 am

The meeting started by announcing that Greg Wifley will be leaving the Team, and briefly discussing an e-mail that was sent previously to the group. Sam Naik from CH2M Hill will join the Team, but because of personal reasons he was not able to join us for this meeting.

The Partnering Team completed check-in and then reviewed the Team Charter and Ground Rules.

TIER II is having their meeting concurrently; therefore we will not have a TIER II link participating in this meeting.

The Team then reviewed consensus items, updated the Action Item List, and reviewed the parking lot items from the March 2009 meeting. The updated Action Item List has been inserted as the last page of these minutes..

Consensus Item 01 – The March 17th & 18th, 2009 meeting minutes have been approved. A final copy of the approved minutes will be posted to the IR portal and archived.

Review of Action Items:

Gerry led the Team through the active Action Items from the March 2009 Action Items List and updated the list accordingly.

Revision of future meetings/activities:

- RAB Meeting – Fall 2009, Probably needed for Site 43 ROD
- Monthly telecom on first Friday of each month from 10:00 to 11:00 am
- UFP SAP UST Site 2 DQO Conference Call on July 21, 2009 10:00am-2pm

- Partnering Meeting - September 1 & 2, Pensacola, FL (LUC annual inspection may be included before or after the partnering meeting)

-Next Meeting Leader – Tracie Bolaños.

Partnering Meeting, which was agreed for November 18-19, Jacksonville, FL was moved to October 28-29th in Jacksonville, Florida.

Changes to the Agenda:

Facilitator training partitioned into two 30 minutes sections.

2. Break 9:20 – 9:30 am

3. OU2 RAD Update 9:30 – 10:35 am

Mr. Owens, from Navy RASO, gave a presentation regarding radiological investigations of OU2, provided preliminary results and discussed how to proceed forward.

Initially Mr. Owens provided additional information regarding the inspections and services provided by RASO. RASO inspects and provides support for permitted areas, mostly related with power sources, disposal of radioactive materials and support ships. There are very few environmental sites with radiological concerns (among them some BRAC, IR, research and development).

Sites 12, 25 & 27

- Site 27 – radium dial shop - Building 709 was demolished in approximately 1976; Radium has an approximate half life of 1600 years. The site history indicates there have been inconsistencies among contractors and studies completed.
- Site 12 – Soil samples results exceeded 40 CFR 192.12 (5pCi/g) and radiological contaminated metal debris was removed.
- Site 25 – Building 780; 25 gallons leaked from the storage area.

A specialty contractor visited the sites in April 2009 to collect and analyze soil samples for alpha, beta & gamma rays as part of RAD surveys. Currently the contractor is in the process of evaluating results to determine a Derived Concentration Guideline Level DCGL which is similar to a risk based action level.

One of the main purposes of presenting this information to the Team was to get ideas and propose how to move forward with USEPA and FDEP. Usually the Department of Health is the lead regulatory agency for radiological issues. FDEP has groundwater risk based screening levels for a partial list of radiological contaminants under 62.777, but there is no regulatory standard for soil media. Additionally, USEPA has some screening levels but they are not up to date.

The investigation will follow the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) – August 2000 Process which provides the data life cycles or phases including:

- 1- Planning Phase
- 2- Implementation Phase (Survey & Sampling)
- 3- Assessment Phase (Data review & evaluation)

User Manual for RESRAD Version 6 will be followed.

Mr. Owens stated that currently no soil regulatory standard for radiological contaminants is available, however a previous cleanup at NAS Jacksonville used 5pCi/g which may have come from Uranium Mining Tailings Radiation Control Act. He indicated that we may consider leaving the RADON exposure open to evaluate the RADON contribution to the radiological contamination.

Mr. Owens indicated that the Regulatory provisions and standards include:

- 1- Nuclear Regulatory Commission Final Rule on Radiological Criteria or License Termination (July 21, 1997)
 - the derived a soil concentration (0.6pCi/g) acceptable for unrestricted release
 - Decontamination & Decommissioning code that corresponds to 25 mrm/yr dose using default parameters

FDEP main concern is the groundwater. The available data is old; therefore FDEP will request additional groundwater samples. Discussion arose because for radiological contamination aqueous samples should be filtered. However, FDEP doesn't allow for filtered samples. Additional information regarding how low turbidity can be achieved for sampling groundwater with proper well development was given as an alternative to needing filtered samples.

Groundwater radiological contamination could be natural occurring. However, background information can be gathered to define the radiological contamination that is not attributable to background.

Preliminary RESRAD derived DCGL is 1.63npCi/g for 25mrm/yr

- 2- 1977 OSWER directive
 - Provides a maximum dose for occupational exposure 500mrem/yr
 - Background concentration for coastal plains (Florida is considered a coastal plain) is 26 mrem/yr from cosmic radiation
 - Average US person receives 360 mrem/yr from natural resources

Mr. Owens suggested the following path forward:

- Use RASRAD to evaluate data
- Follow MARSIMM methodology
- Regulators will receive the survey results for review after Navy internal review has been completed
- There is background data for this site and it will be subtracted to have the result that does not include the portion attributable to natural sources

OU2 RAD has a couple of areas that overlap with the soil removal under the IR program. However RASO scope only goes to 1 foot instead of the 2 feet that CH2M Hill is scoped to do. Process on how the reporting will happen will be discussed further among the involved parties. RAD waste is very expensive to dispose. This should be taken into consideration when planning on how to proceed. There will be radium waste characterization to section the waste into RCRA waste or RAD.

4. Break 10:35 – 10:45 am

5. Facilitator Exercise 10:45 – 11:00 am

We went around the room and everyone said something nice about Greg Wifley. Afterwards, Nancy said something positive each person contributed to the Team.

6. Gant Chart 11:00 – 12:00 pm

UST Portion

Gerry Walker and Greg Wifley led a discussion/review of the Gant chart.

UST 014 – Completed

UST 015/Site 1107 – Discussion based on last Partnering Team meeting minutes and path moving forward.

Action Item A-010609 – Gerry will provide Mike Singletary with a copy of the WRS report for Site 1107.

Action Item A-020609 – Gerry and Patty will follow up on how to proceed further with UST Site 1107. Possibly by submitting a Site Rehabilitation Closure Request to FDEP).

UST 017 (DFM Pipeline) – Ongoing quarterly sampling. Last sampling results were below FDEP GCTLs, therefore according to FDEP regulations; one more round of sampling is needed with concentrations below GCTLs.

UST Building 1120 – SRCO letter under Navy internal review. However, the LUCs process needs to be discussed further.

UST 18 Crash Crew Training Area – Denitrification biotrap work plan currently submitted for Team review.

UST 15/ Site 1159 – Deliverables are on going with CH2M.

UST 21/Site 20 – Additional monitoring of this site will be completed.

UST 22/Site 21 – Finalizing the SAR, will be submitted soon.

UST 24/Site 37 – CH2M Hill is currently working on this site and a technical memo should be submitted for Navy review soon.

Action Item A-030609 – Greg Wifley will follow up on the technical memo status.

UST 25/Bldg 1932 – This project will be transitioned to the new CH2M Hill representative in the Team. Work had been started but it is currently under review by Mr. Singletary.

UST Bldg 782 – RAP is being contracted.

UST Bldg 1917 – Source removal report submitted for review.

UST Bldg 2270 – NASP PWC utilities department will take over this UST site from Greg.

UST Bldg 3644 – SAR has been submitted for FDEP review.

Sea Wall – SAR for has been submitted for FDEP review, and additional SAR Addendum may be needed.

The Navy is redistributing workflow and funding, therefore some of these sites will be delayed/affected due to this administrative change.

7. CNO Award Update 12:00 – 12:05 pm
CH2M Hill will continue to support the writing and following up related to the CNO award.

8. Lunch Break – 12:05 – 1:20 pm

9. Continue CNO Award Update 1:20 – 12:05 pm

Initial write-ups were assigned according to the topics. See table below:

AWARD	TOPIC	ASSIGN TO
Team CNO Award	OU2 ROD – Streamlined	Gerry W.
	Landscaping project on CERCLA site 38	Greg C.
	Bronson Field Recovery Systems	Greg W.
	Site 1 Wetland 3 decision, remedial system shutdown and revised compliance point	Gerry W.
	Partnering Process (on board review)	Tracie & Greg F.
	Multivariate Analysis of MNA Parameters	Brian C.
	Closed petroleum sites NFA	Gerry W.
	UST Site 3	Brian C.
Facility CNO Award	WWTP shutdown	Greg C.
	Earth day and beach cleanup	Greg C.
	FDEP Marina Award	Greg C.

The group discussed the overlapping between the Team versus Facility CNO award. The Team reviewed the Secretary of Defense 2007 guidance document. Timeframes for achievement period were discussed. Previously the Team CNO, which is given every other year, was prepared and then the facility CNO was prepared afterwards. However, the rules change every time, therefore for formatting and requirements we should wait until the solicitation for proposals are available for 2009.

Consensus Item 02 – CNO Team and Installation awards will be submitted by the Partnering.

Action Item A-040609: Individual writers, which had assigned topics, should submit their write up to the Team by August 1st, 2009.

CH2M Hill will oversee the compilation and submittal of both awards.

OU 2 LTM DQO SAP Meeting (CH2M Hill) was scheduled for July 2nd, 2009.

10. Break – 2:35 – 2:50 pm

11. Facility Update – 2:50 – 3:00 pm

Greg Campbell provided a brief facility update.

- The Air Force continues building a hangar a Sherman field.
- Looking into placing a windmill farm, it is in the planning/funding stage. Greg will have more information later.

12. Gant Chart – 3:00 – 4:00 pm

Gerry Walker led a discussion/review of the Gantt chart.

OU1 – Technical memo will be discussed tomorrow in length. FDEP and EPA will provide comments on the referenced memo.

- Annual Monitoring needs UFP SAP, which is currently being prepared by TtNUS.

OU 2 – Draft Final OU2 RD is under regulatory review (due July 15th, 2009).

OU 11/Site 38 – Highest Priority because we are scheduled to be out in the field next week, we will do an onboard review tomorrow.

OU 16/Site 41 – The Feasibility Study is being prepared by TtNUS. Discussions have been ongoing regarding the COC list. David Barkley (Navy Eco) should be included in internal conversations.

Action Item A-050609: SCAP date to be reviewed during the next Partnering Meeting.

OU 18/Site 43 – The ROD is scheduled for this year. The upper management presentation for EPA was sent last week, FDEP will provide comments through the discussion during tomorrows meeting.

OU 19/Site 44 – The Feasibility Study is under regulatory review and due by mid July 2009. It should be noted that USEPA is expecting justification for any site going to MNA. See note sent through email (attached to the minutes)

Action Item A-060609: Brian will review the Feasibility Study and provide additional information for the proper justification for the MNA.

OU 20/Site 45 – Draft Feasibility Study under TtNUS internal review.

- Alternative Analysis Summary triggered comments and stated that this site will be industrial use. Therefore, the Feasibility Study concentrated on industrial site use. The main contaminant at this site is lead.

OU 21/Site 46 – FS in being produced by TtNUS. However, the information received (Greg C. sent the contractor’s results) will allow for no action, MNA.

MRP Sites – TtNUS is currently working on UFP SAP for (MEC Sites and MC Sites)

13. Facilitator Exercise – 4:00 – 4:20 pm

The Team discussed the need to establish a process for introducing a new member coming to the group. Additionally, MBTI types should be known and acknowledged, as well as the conflict styles.

Action Item A-070609: Nancy Rouse will obtain the MBTI types of the Partnering Team.

14. Document Priority Table – 4:00 – 5:45 pm

Gerry Walker led a discussion/review of the Priority Table. Changes were made directly into the table, which will be available during the next partnering meeting.

OU 3 – Sediments in Pensacola Bay. The completed ROD specified “No Action” with a Five-Year Review. This decision was made because of 80% toxicity was the threshold for this site and two of the decision units were below this limit (survival). This site could be a candidate for a 5-yr Review in 2013. It should be noted that site conditions have changed due to hurricane (force majeure- Hurricane Ivan). The Team discussed if the site needed to be sampled at these two decision units. However, based on the Team’s review of the ROD and the specific components of the remedy, it was determined that there is no need to sample. Therefore, according to the ROD the only action was that the LUCs should be verified.

Action Item A-080609: Greg C. will verify if the Homeland Security Restrictions, as specified in the ROD for OU3 / Site 2, are still in place.

Consensus 03: Based on the Site 2/OU 3 ROD, sediment toxicity studies will not be required. Homeland Security Restrictions must be verified to satisfy 5-year review requirements.

Action Item A-090609: Greg F. will amend the SCAP to reflect the Five year review requirements as specified in the OU 3/ Site 2 ROD.

15. 1st Day Meeting Closeout – review Action Items/Consensus Items 5:45-6:00 pm

The Partnering Team reviewed the new action items and adjourned for the day.

16. 2nd Day Check In – 8:00 – 8:15 am

The Partnering Team completed check in. New attendees include Peggy Churchill, Keith Henn, and John Schoolfield.

17. Proposed Plan Site 43 – 8:15 – 9:00 am

USEPA main comment is to provide specific justification for MNAs.

FDEP comment is regarding the sentence that claims that leaching is not an issue at this site. However, after further discussion, the Team agreed on language to substitute and clarify this claim.

Additional comments:

- Page 1 – footnote, should be consistent with the information repository listed in the For More Detailed Information section
 - FDEP recommends to have a figure showing the proposed soil removal and monitoring plan
 - USEPA recommends to add an aerial picture to the Proposed Plan
- Page 3 – Need to clarify the sentence (last sentence before Ecological Risk) Rephrase or add more information for clarify that the impact to the groundwater will be unlikely after removal of impacted soil.
- Page 4 – “Is the lead agency’s...” typo - correct
- Page 5 – replace “mitigate” with “prevent”. Compromise delete segment so it reads “LUCS would be used to prohibit groundwater use, thus eliminating any potential risk associated with direct exposure to groundwater. This satisfies the requirement for protections....”
- Page 10 – FDEP
 - Add some language to preserve the right of FDEP to take into consideration public comments. Tracy will provide model language.
 - NASP Bldg at Page 10 should say Bldg. 4560
- General / Throughout the document
 - Additional LUC language regarding the LUCIP should be added to the Proposed Plan.

Administrative Record:

Should be all converted to NIRIS. However, TtNUS have been annually updating it.

Action Item A-100609: Greg C. will verify with the PAO for aerial figures of the base.

18. Break – 9:00 – 9:15 am

19. OU 11 Site 38 UFP SAP Update – 9:15 – 10:05

Gerry led the Team into the discussion the Site 38 background and activities related to the DQO .

Action Item A-110609: Greg C. will verify the scope of work for the soil removal Site 38 north of Radford (verify if it was 2 ft or 5ft)

FDEP concern is that if the 95% UCL will be used for any decisions, they need to consult with University of Florida.

FDEP and USEPA signed the UFP SAP and TtNUS will be in the field next week.

20. Break – 10:05 – 10:15 am

21. UST Site 2 UFP SAP Update – 10:15 – 10:30 am

Following Navy policy a DQO Conference call will be scheduled for July 21st for UST Site 2 (10am -2pm). Gerry and Peggy Churchill led the group in a brief history of the site and shared related pictures with the Team.

22. OU 1 Wetland Background Sediment Concentration – 10:30 – 11:00 am

Betty Li joined (TtNUS) over the phone.

Gerry provided background history of the site. The Technical Memo for OU1 treatability evaluation, which was submitted by TtNUS to the Team, main purpose was to come up with some alternative sampling location. The compliance point, as agreed, will be moved further from Wetland 4. However, FDEP does not agree with the approach taken to calculate a representative concentration used for background (which was calculated at 4,030 µg/l for lead). The method used to calculate such concentration was UTL, which is not recommended by FDEP.

During the discussion, FDEP recommended that a better approach to calculate a representative concentration for lead would be twice the mean. Previous data was discussed and which wetlands should be included in the calculations. Following FDEP comments, data from wetlands 19a, 10, 12 and 13 was added to the data set. It should be noted that wetland 13 has a considerably high lead concentration, however since there is a No Further Action on the site, this data will be used in calculating the representative background concentration for lead.

Even though FDEP would like to see more data from Wetland 4, FDEP agrees with calculations made during the meeting. The Consensus 4 states the agreement by the NAS Pensacola Partnering Team.

Consensus 04: The background data range for iron is adjusted to include wetlands 10, 12, 13 and 19a. The resulting two times the mean is 5,862µg/l, which will be used as the compliance criteria for OUI Wetland Surface water.

Action Item A-120609: TtNUS will amend the Technical Memo for OU1 Wetlands to reflect the updated background calculations and will be submitted for FDEP/EPA approval by June 26, 2009.

23. 2nd Day Meeting Closeout – Review Action Items/Consensus Items/Meeting Schedule/Next Agenda/plus-delta/Facilitator Evaluation – 11:30 – 12:00 pm

Discussion regarding having the next partnering meeting next or before the Key West Partnering Team to alleviate FDEP traveling happened but due to schedule conflicts, it will not be feasible this time. Partnering exercises and logistics were discussed.

The Team agreed to move the November 2009 Partnering Meeting to October 27 (½ day), October 28th (full day) and October 29th (½ day).

- Reviewed Action Items
 - Need for retaking the MBTI or provide last known results, since the results for the NAS Pensacola Partnering Team are not available.

- Reviewed Consensus Items
- Next Meeting Agenda:
- Team completed a meeting evaluation:

Plus

Meeting place
Brownies
Productive
Site 2 OU3 – discussion & OU 1
UFP SAP signed!
RASO presentation

Delta

Tallahassee
Photocopies of the RAD
presentations
Greg W. last meeting

Facilitator Feedback –

The facilitator Nancy Rouse reviewed a few items she plans on placing in her report.

24. MRP Sites Update – 1:40 – 2:30 pm

Response to comments on the Preliminary Assessment completed by Malcolm Pirnie was distributed among the Team. The discussion regarding the steps forward was led by the Navy RPM, John Schoolfield.

For comment number 3: The groundwater needs to be addressed. FDEP considers groundwater as a Category 2 (62.780). Leaching of chemicals to groundwater is a possibility; therefore exposure pathway needs to be addressed. The comment will be addressed by stating that SPLP analysis will be done at the sites.

The preliminary sampling design figures for NAS Pensacola MRP sites were shown to the Team. Mr. Schoolfield commented that the Navy will try to avoid surface features like runways and paved roads. Therefore, areas with housing or rubble will be revised to accommodate the sampling accordingly.

UFP SAP Site 2, 3 and 4 NTTC Corry Station Discussion followed. Notes were captured separately.

These minutes are a summary based on informal notes taken at the meeting. They are not intended as a verbatim transcript and may not have captured everything that was discussed.

New Consensus Items from June 16 & 17, 2009

1	<i>The March 17th & 18th, 2009 meeting minutes have been approved. A final copy of the approved minutes will be posted to the IR portal and archived.</i>
2	<i>CNO Team and Installation awards will be submitted by the Partnering Team.</i>
3	<i>Based on the Site 2/OU 3 ROD, sediment toxicity studies will not be required. Homeland Security Restrictions must be verified to satisfy 5-year review requirements.</i>
4	<i>The background data range for iron is adjusted to include wetlands 10, 12, 13 and 19a. The resulting two times the mean is 5,862µg/l, which will be used as the compliance criteria for OU1 Wetland Surface water.</i>

Action Item No.	Responsible Party	Status	Due Date	Action Item
Ongoing Action Items				
A-050305	Team	Ongoing		Team needs to review the Document Tracking and Priority Table to hit document due dates.
A-070305	Gerry	Ongoing		Gerry will update the Document Tracking and Priority Table.
A-050208	Gerry & Team	Ongoing		When documents are submitted to the Team, the author will e-mail recipients and indicate the agreed comment approval dates with the statement: "Roses are red, violets are blue – just wanted to remind you when your comments are due"
A-030309	Gerry W.	Completed		Gerry to update the Gant Chart for OU2 to include groundwater to surface water investigation by next meeting.
A-040309	Greg C.	Completed	3/27/09	Greg Campbell to check with the contractor regarding surveyed excavation area map for OU11 Building 71 and give to Gerry by 3/27/09.
A-060309	Gerry W.	Completed	4/17/09	Gerry to update the entry for OU20 Site 45 on the Gant chart to match the 8/13/2010 SCAP date.
A-070309	Gerry W.	Completed	4/17/09	Gerry to update the entry for OU21 Site 46 on the Gant chart to match the 9/16/2010 SCAP date.
A-090309	Patty & Greg C	Completed	6/1/09	Patty and Greg C. to determine who has the funding to complete this Request for Site Rehabilitation Order under an RMO 2 to FDEP for Site 1107.
A-140309	Greg F.	Not Completed	3/27/2009	Greg is going to call Tracie at 10:00, Friday, March 20, 2009 regarding the POC sample location for the OU1 wetland 4D monitoring and report back to the team by March 27, 2009.

New Action Items from June 16 & 17, 2009 Meeting

Action Item No.	Responsible Party	Status	Due Date	Action Item
A-010609	Gerry W.			UST 15: Gerry to provide Mike Singletary with a copy of the WRS report for Site 1107
A-020609	Patty & Gerry			UST 15: Gerry and Patty will follow up on how to proceed further with UST Site 1107 Site Rehabilitation Closure Request
A-030609				UST 24/ Site 37: Greg W. will follow up on the technical memo status
A-040609	Team members		8/01/2009	Individual writers which had assigned topics should submit their write up to the Team by August 1 st , 2009.
A-050609	Greg F.		9/01/2009	UST 16/ Site 41: SCAP date to be reviewed during next Partnering Meeting.
A-060609	Brian C.			UST 19/ Site 44: Brian will review the FS and verify that proper justification for the MNA.
A-070609	Facilitator			Get MBTI types of the Partnering Team (either by voluntary submission or by inviting the Team to retake the test online)
A-080609	Greg C.			Greg C. will verify if the Homeland Security Restrictions, as specified in the ROD for OU3 / Site 2, are still in place.
A-090609	Greg F.		9/1/2009	OU 3/ Site 2 ROD: Greg F. will amend the SCAP to reflect the Five year review requirements as specified in the OU 3/ Site 2 ROD.
A-100609	Greg C.		6/26/2009	Greg C. will verify with the PAO for aerial figures of base for Site 43 Proposed Plan.
A-110609	Greg C.		6/26/2009	Greg C. will verify the scope of work for the soil removal Site 38 north of Radford (verify if it was 2 ft or 5ft)
A-120609	TtNUS		6/26/2009	TtNUS will amend the Technical Memo for C Wetlands to reflect the updated background calculations and will be submitted for FDEP/EPA approval.

Meeting Schedule:

- Monthly telecom on first Friday from 10:00 to 11:00 am
 - UFP SAP UST Site 2 July 21, 2009 10:00am-2pm
- September 1-2, 2009 - Pensacola, Florida
- October 28-29, 2009 - Jacksonville, Florida

Things to consider before you consider MNA

MNA is a frequently used method of treatment (or avoidance of treatment). The frequency of its use has caused the Agency to take a more critical look at its efficacy. It is the intention of the Agency that MNA not become a fall back approach to the remediation of recalcitrant contaminants. The Agency is in favor of MNA at only those sites where it is appropriate. And MNA is appropriate as a remedial approach only where it can be demonstrated that its use will achieve the remedial objectives within a reasonable time frame and will likely meet the appropriate ARARS.

Moreover, the efficacy of MNA must be demonstrated before it is selected as a remedy. Three types of site-specific information may be required:

1. Historical ground water and/or soil chemistry data demonstrates a trend of declining contaminant concentration.
2. Hydrogeologic and geochemical data that demonstrate natural attenuation processes and rates.
3. Field or microcosm studies.

Be apprised, that unless #1 is of sufficient quality and duration, #2 is generally required.

Also, these requirements generate three obviously valid questions concerning what constitutes a trend. I will attempt to address these questions. The first question is: What sort of historical ground water and/or soil chemistry data can be used needed to demonstrate a trend of declining contaminant concentration?

Answer: There are two rates of decline, the rate of decline in a single well over time, and the rate of decline along a flow path in ground water.

The rate of decline in a well over time determines how long a plume will last. The rate of decline in a well along the flow path will determine how far the plume will extend.

The second question is: How much historical ground water and/or soil chemistry data is needed to demonstrate a trend of declining contaminant concentration over time in well?

Answer: Sites with at least ten years of monitoring data showing at least a ten fold reduction in concentration of the contaminants have a reasonable chance to demonstrate a declining trend.

The third question is: Which sites can be demonstrated to achieve remedial objectives within a reasonable time frame?

Answer: Depends on the attenuation required to reach the goal, and how long we are willing to wait.

These tenets -if you will- and requirements represent the lens through which recommendations concerning MNA will be viewed. We can discuss this at the next partnering meeting.

Thanks