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MINUTES FROM ORLANDO PARTNERING TEAM MEETING DATED 28 OCTOBER 2002

NTC ORLANDO FL
10/28/2002
NTC ORLANDO

ORLANDO PARTNERING TEAM - MEETING MINUTES

Date:	28-29 October 2002
Location:	Oak Ridge, Tennessee
Team Leader:	Steve McCoy (filling in for Dave Grabka stranded in Tallahassee)
Gatekeeper/Timekeeper:	Steve McCoy
Facilitator:	Pete Paznokas
Recorder:	Mark Salvetti

OPT MEMBERS:
Steve Tsangaris
Barbara Nwokike
Steve McCoy
Greg Fraley
Mark Salvetti
Dave Grabka (By Phone)

SUPPORT MEMBERS:
Scott Newman, Tier II
Wayne Hansel, SDIV (by phone)

GUESTS:
Rick Allen, Tt NUS
Lawson Anderson, Tt NUS
Teresa Grayson, Tt NUS
Jim Davis, Tt NUS
Allan Jenkins, Tt NUS

HANDOUTS DISCUSSED AT THE MEETING

1. Meeting Minutes 9/4-9/5, 2002
2. UST/IR Update and Status – October 2002 (Tetra Tech)
3. Action items
4. SA 17 Tag Map
5. DoD FOSET Guidance handed out by Lawson
6. Non-Verbal Communication presentation & exercise
7. iSOC literature and SA 2 tag map with proposed iSOC wells
8. OU 3 (SA8 & SA9) arsenic distribution data figures
9. SA 39 Groundwater Data Maps

28 October 2002

CHECK-IN

Dave G in Maryland during the sniper shootings. Sheared his hair. At airport at 4AM this morning, only to find out his flight was cancelled a little after 6AM, so he's only joining us by phone. Scott just got back from a week in Germany. It was nice; still on German time a bit. Pete just happy to be here. Barbara just finished the PE test, and she's looking forward to her approval letter. Greg suffering with the Braves. Blaming Cox and Sheffield. Was at the last game. Rick A. and his wife were at bikefest in Daytona. Rode his Honda Gold Wing. Steve T. hates Florida State, so he's had a great month (Miami & Notre Dame wins). Other than that life's OK. Mark S. feels badly for the Giants, but at the same time it's nice to see bad things happen to someone other than the Red Sox. Still looking for a dog. Chasing the kids around at their activities. Trying to get house painted. Steve M. doesn't have much new to report. Eastern TN in mourning over the Vols problems. Lawson had a good college football weekend. Went to Ark – Old Miss game. Big win.

ACTION ITEMS

Went through action items (see revised list at end of minutes).

PERSONNEL CHANGES

None

UST/IR Update (see Handout)

Bldg. 200

The ninth quarter MOP sampling was conducted the week of 7/29/02. Site looks about ready to close. We're approaching NFA. **Dave G:** Awful close. Spoke to Paul C. this morning. Last quarter below GCTLs, this quarter just above in one well (TRPH in MW-08). Paul is submitting a MOP report later this week, requesting semi-annual monitoring at this site for a year. Then we re-evaluate.

Bldgs. 2080

The final SARA recommending NA monitoring was submitted to FDEP on 5/30/02. TtNUS received verbal comments from FDEP requesting additional information, and is currently preparing the information for submittal to the FDEP. A Supplemental SAR addendum was submitted to FDEP on Sept 30, 2002. **Steve M:** Are there still exceedances? **Dave G.** Yes, we will still be monitoring.

Bldg. 2273

The second quarter MOP sampling report (sampling performed in June 2002) was issued on Sept 7, 2002. Update handout has lots of graphs. MW-04 jumped well over 5 mg/L TRPH GCTL. MW-05 approaching GCTL for methylnaphthalene.

McCoy Annex

Bldg. 7125

A data report summarizing the results of the June 2002 sampling event was submitted to FDEP on Sept 7, 2002. County added bugs here to attempt remediation (known as the County Bug Site). Was a while ago (even before Dave G.)

Bldg. 7151

We reviewed the graph of groundwater concentrations presented in the update handout. Top two lines are MW-01, bottom two are MW-02. **Dave G:** This is also a site where the next monitoring report is going to propose semi-annual monitoring.

Bldg. 7174

The third round of quarterly sampling was completed in September 2002, and a report summarizing the results will be submitted in December 2002.

Bldg. 7175

The 1st quarter MOP sampling report was submitted on 7/22/02. The 2nd quarter MOP sampling was conducted the week of 7/29/02, and the second quarter MOP sampling report is currently in preparation. Benzene and naphthalene are below GCTLs. Note that the update handout indicates the NA Monitoring

Plan was approved in Feb 2, 2001, but it was really 2002. Dave G. has the SAR approved 2/20/02, so there's a typo in the update.

Bldg. 109

Wayne H.: Soil was excavated and removed by Nodarse, and the excavation was dewatered until Nodarse got clean water. First round of sampling in October 2002 had no detections above MCLs. Nodarse will resample in January 2003 for final closure of the site.

OU 1

Draft 5-year review was issued to the OPT on 9/25/02. Medical waste removed; about 6,000 tons hauled offsite. Of this total, only a small fraction was actually considered a medical waste that required incineration. See OU 1 update below.

OU 3

Treatability sampling report for the baseline and 1st quarterly sampling conducted in May and June 2002 was issued on Oct 25, 2002. May want to consider sampling less frequently due to the slow GW velocities.

SA 36

A draft "Operating Properly & Successfully" (OPS) report was issued on 04/05/02. A Technical Memorandum on the groundwater investigation at SA 36 was issued 05/21/02 and subsequently approved by FDEP and USEPA. The portion of SA 36 excluding the groundwater contamination was included in the FOST/EBST Addendum 4 issued by the Navy during the week of 06/03/02. Tt NUS issued the draft Site Investigation Report on September 16, 2002. A draft Decision Document for the portion of SA 36 with groundwater contamination is in preparation. Dave G. drafted the final FOST approval for SA36, 39, and 40 (clean). Hoping to be signed today (Oct 28, 2002) or tomorrow and then will be sent out.

Replacement wells were installed at the site in April 2002, and treatment efficiency monitoring samples were collected from the replacement wells in April 2002. CH2M Hill issued a report summarizing the results of the sampling in October 2002.

SA 39

Monitoring wells at the site were abandoned in December 2001 as part of site development activities at the Main Base. The wells were reinstalled at the site in April and May 2002, efficiency monitoring continued at the site in May 2002. A report summarizing the results of the monitoring activities was submitted to the OPT in October 2002.

Problem with downgradient C well increasing from 26 ppb to 42 ppb. No additional wells downgradient from this well. May be hard to say we are being protective (OPS). See discussion later below.

OU 4

$KMnO_4$ remediation system expected to be complete by the end of February 2003. An EBST/FOST for the clean (southern portion) of Area C should be ready by the end of this year.

Herndon Annex - SA 2

Quarterly sampling of the SA 2 monitoring wells (those not included in the treatability study) was performed in June 2002, and the sampling report was issued on September 13, 2002. Will be proposing a new technology (iSOC - see SA2 discussion later).

OU 2

The second round of quarterly sampling was conducted the week of 06/17/02, and the sampling report was issued on September 13, 2002. The next round of sampling was conducted in September 2002.

A draft final EBST/FOST for three small parcels adjacent to OU 2 was issued Sept 24, 2002. Done with public comment review.

SA 16

Nothing new. When Site Rehab Completion Report is done (Steve T.), Dave will prepare an SRCR Order, which will say the LUCs can be removed.

SA 17

A second round of post-injection groundwater sampling was completed in July 2002; the results indicated that contaminant rebound had occurred. Consequently, five additional injectors were installed and additional Fenton's Reagent was injected at the site in August 2002. Additional injection was completed in September 2002, and post-injection sampling was completed in October 2002. Steve T. received the data last Friday. Steve hoping to have a data summary later today or tomorrow. **Steve T:** We may need to talk about what to do next if we still have significant contamination. Steve T. doesn't have money for another injection. Steve T. sent out a spreadsheet/graph (we think). See further SA 17 discussion below.

A draft work plan to delineate the downgradient groundwater contamination was issued to the OPT on May 31, 2002. The downgradient groundwater contamination was delineated with DPT in August 2002. Monitoring wells installed to complete downgradient groundwater delineation were sampled in September 2002. See further SA 17 discussion below.

SA 18

A draft Decision Document was issued in April 2002. A draft FOST/EBST is in preparation. A draft Technical Memorandum documenting the soil removal was issued on Oct 27, 2002.

SA 52

The data report for the June 2002 sampling was issued on Sept 13, 2002. Prelim data from September 2002 groundwater sampling event shows OLD-52-13 was ND for dieldrin (at 0.1 ppb). Ran filtered and unfiltered. Both were ND. Will analyze again using lower detection limit method, running both filtered and unfiltered.

SA 54

CH2M HILL issued a draft Technical Memorandum documenting the SA 54 soil excavation on Oct 27, 2002. Barbara hopes to have heard from the Army regarding the MOA by the time we meet again.

Updated Format Discussion: Keep the charts, but for IR need the longer verbage rather than the bulleted summary. Something like SA 36 would be fine. Use a horiz line to represent the GCTL for each graph, unless the GCTL is so low compared to the data that a line isn't practical (visible). Try to get the x-axis consistent on each graph (either monthly or quarterly). SA 36 writeup will be the standard for both USTs and IR. **OPT gave a thumbs-up.**

STUDY AREA STATUS:

55 study areas have been screened:

⇒ 42½ SAs have been submitted as final and approved for NFA: 1, 3, 4, 5, 6, 7, 8[WWTP], 10, 11, 15, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 37, 38, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 53, 55.

⇒ 4½ SAs became OUs (8 [greenskeeper storage] & 9 [OU3]; and 12, 13, and 14 [OU 4]).

⇒ 4 SA reports have been approved by the BCT as final, but will require additional investigation/remediation (SAs 17, 39) or continued groundwater monitoring (SA 2, 52).

4 SA reports are in various stages of being finalized (16, 18, 36, 54).

The Study Area Status has not changed since the July 2002 OPT meeting.

Tier II Update (Scott N.)

Tier II hasn't met. No update, other than the notes in the Action Item section.

SA 17 GW Delineation (Mike Campbell)

Mike handed out a tag map for SA 17 monitoring wells. That map is the basis for the following discussion:

Only methylene chloride exceeds GCTL in the shallow zone. Not present in the lab blanks, but Tt's chemist feels it's a 99 percent probability that it's a lab contaminant. Tt advises that the shallow zone has been delineated, and there are no exceedances of the GCTL.

Deep zone has a fair number of exceedances for 1,1-DCE, 1,2-DCE, TCE, and VC. Also one benzene exceedance. As you head from the center of the plume towards the NE, exceedances become deeper and deeper. Still exceedances at P-118 and P-119. Still have a 1,2-DCE exceedance in the downgradient well OLD-17-45C (100 ppb versus GCTL of 70 ppb). Also, in NE corner of map have well OLD-17-40C. Although not shown on the tag map, Mike wanted to note that this well had three exceedances (chloroform, bromomethanes). These compounds are almost always associated with chlorinated water. Tt chose not to include these compounds on the tag map, as the detections are probably associated with a potable water leak.

Bottom line, extent has not been completely delineated in the direction of GW flow. Recommend more DPT. This will require crossing Avenue C onto land the Navy no longer owns.

Dave G: How sure are we that we don't have 1,2-DCE deeper than 50 feet at OLD-17-45C? **Mike C:** We don't know, but if we're doing DPT we ought to go deep enough to confirm if we have deeper contamination. Since the plume seems to be plunging. State will insist that we have a clean well.

Mike C: Dave, will we need a MW at depth if the DPT is clean? **Dave:** Yes, if the water levels show that the plume is still moving downward.

Steve M: Tt NUS will issue an addendum to the delineation work plan for OPT review.

SA 36 and LUCs

Greg F: We keep getting mixed signals from Tier II. We understand that we have to move forward with remediation. But we would like something in writing to document what is expected of us for OPS determinations, transfers, etc. It would be nice to get this from Tier II to show the consensus. Is this even possible? We don't know.

Scott N: Have we seen John Johnson's position report? Greg has, because John is with EPA. We know what EPA wants, but that's not DoD.

ACTION ITEM: Scott N. to ask Tier II for written guidance regarding LUCs and how they relate to OPS and property transfers.

Steve M: Where does Orlando come in all this? **Barbara N:** If we go early transfer, EPA is out of the loop for the early transfer. Would be negotiating directly with the State of Florida. **Dave G:** Cecil is moving ahead with an EPA-written ROD using the bare minimum of what EPA needs in the LUC portion. This will then go to Navy for review. Then hopefully maybe something to satisfy both EPA and DoD may come from this. Also proposing to have a meeting with EPA and Navy higher ups to see what can be done.

Steve M: Why should we keep spending time and wrestling with this until the LUC issue is resolved? Seems like a waste of time.

Scott N: The way he understands the guidance, we as a team are supposed to work together on coming up with our own language and push it up the chain.

Lawson: LUC Assurance Plan is the big picture. It documents how LUCs are implemented, who's responsible for what, what to do when things change, etc. Then the implementation plan is site-specific.

What about what Joe MacCauley wants? **Barbara N:** As of 3 weeks ago, her legal said that we are to continue.

We've gone about as far as we can. We have an OPS and a DD for SA36. It's missing the LUC language, but once we have some it will only take hours to fix. Without the LUC language, Greg's attorney won't look at the OPS. **Dave G:** I thought the OPT agreed that we would let EPA insert their LUC language (minimum), and that's what we'd run up the chain for approval. **Barbara:** The Navy lawyer has said this is not what they want to do. Doesn't think DoD is willing to consider the EPA's language. **Dave G:** Oct 4, 2002 letter from Undersecretary of Defense says Navy agrees that EPA has post-ROD authority. Now they just need to work on institutional control part of it.

ACTION ITEM: Greg F: Will put together something for SA36 while we wait for a Tier II letter. This will be the minimum language for LUCs that EPA needs for DD and OPS. Won't be minimal, as he would prefer a letter from the Navy saying what they can live with. Will have this done by November 8.

Early Transfer (ET) (Lawson Anderson)

Lawson handed out the DoD FOSET guidance.

Dave G: State has taken an early look at the Early Transfer (ET) document recently distributed to the OPT, but has not yet gone to their attorney. Dave G. and Tim Bahr looked at the text. Page 1 mentions an October 14, 2002 letter from the City. This should be part of the ET package. Certain parts of McCoy have been transferred to GOAA. ET says Herndon is going to FAA. City has not requested Herndon. Largest portion of McCoy to be transferred to the City has to go to DOI as a public benefit conveyance. ET doc doesn't include this intermediate step. **Barbara:** At this point we'd prefer working with the intermediate agency in another docment, but she will check. Dave thinks this needs to be clarified and the ET needs to spell out how this is going to work with the intermediate agency. Recall DOI botched the

last transfer (issue of deed restrictions not recorded). Tim Bahr wants more specifics on how LUCs will be incorporated. Restrictive covenants, third party rights, enforceability. **Lawson:** Typically would reference a separate document in the Risk Analysis section. Dave thinks the body of the report could mention the mechanism, but not necessarily the specific deed verbage. FDEP wants more specifics regarding intended land use, especially with respect to Area C in Section 4. **Lawson:** More detail is included in Exhibit C. **Dave G:** There are potentially indoor air issues at sites where contaminated GW exists or contaminated soil with VOCs. Want to see a plan illustrating that no buildings will be placed on these sites, or if so a vapor barrier would be required. Need to see details. Section 6, Page 9: State wants an enforceable agreement with the Navy laying out the schedule and time frames, and also ensuring future DSMOA (?) funding. **Lawson:** Is that appropriate for this document? **Dave G:** Because this isn't an NPL or RCRA permit base, the only real stick the state has thus far is denying that a site is suited for transfer. **Barbara:** Don't think we can go beyond 2 years on the funding. Dave wants the ET doc to mention the "agreement" (memo, consent order, etc) and a copy of the agreement must be included as an exhibit to the ET doc. State is worried that once these properties are transferred the Navy will make these sites a low priority and not fund them anymore. Dave thinks there has been a precedence for such an agreement in a Colorado early transfer case. Dave will ask Tim Bahr for more details. **Dave G:** Are there examples of ET sites that are not NPL or RCRA? **Lawson:** Mare Island is one. NTC San Diego, Louisville. **Dave G:** This is something the attorneys are going to have to work out for an enforceable agreement on cleanup schedule, penalties, etc like FDEP used to establish for sites.

ACTION ITEM: Comments to ET document to be emailed to Lawson at AndersonL@ttnus.com.

Draft Area C FOST (Teresa Grayson)

Lead paint? Chips observed on soil around buildings. May need to document that there is no lead paint in soil, unless there is no chance for residential use. If there is no residential, then the little building (SA 55) is OK too. There are PAHs around SA 55 that exceed residential but not industrial. So if we leave it as light industrial, we can leave everything as-is.

Although we didn't take consensus, there was a general agreement that Area C would be designated as non-residential.

On the FOST for Area C, does that mean we are going to transfer all of it, or just the piece w/o GW contamination? The FOST will be for the clean part only, or else we'd need OPS and LUCs for OU 4. But the FOSET will be for the whole of Area C.

29 October 2002

Training (Pete)

Non-verbal Communication. Sixty-five to ninety percent of communication is non-verbal. Body language and movements, facial & eye behavior, body spacing. Variations in speech.

Petroleum Discussion (Brought Wayne H. in via phone)

What is GW situation at Bldg 109? Soil has been removed. **Wayne:** Waiting to resample GW to get it closed out. First round of sampling was clean, but one of the wells was destroyed. Will be resampling in October.

At Bldg 7125, waiting for Paul C. to finish report so Dave G. can review.

Study Area 2

Teresa handed out iSOC information. Tt doing this at NAS JAX. Presented a paper at Amherst. Fits in a 2" well. Tt would install additional wells for this application. Will need to find a DO meter that can read high enough to measure oxygen concentrations that this system can achieve. Teresa thinks we might be

able to achieve DO concentrations above 50 mg/L and approaching 100 mg/L. Would install 20-30 wells for iSOC installation (see figure). Equipment would be rented from the iSOC folks. **Dave G:** Also looking at using iSOC at Cecil.

Discussed running a smaller scale installation around some of the existing deep wells so we can evaluate effectiveness before installing all the treatment wells. Also Steve T. suggested we approach the iSOC folks to see if they would provide the equipment for free, at least until the treatment is proven. We could install the wells.

Got a thumbs-up from the OPT for the two-phase approach, as well as approaching iSOC to contribute their equipment to the pilot. **ACTION ITEM:** Steve M. and Teresa to estimate the cost for full scale treatment of the neighborhood using iSOC.

OU 1 5-Year Review

Although we now need to perform a 5-year review for all the OU's, Steve and Rick would like some feedback on at least the format and content of the OU1 review, as that will serve as the model for future reviews.

The OU1 5-year review can document the change in the GW use restriction zone, but the 5-year review shouldn't wait for it. If we have the zone changed by the time the 5-year review is complete, great. But otherwise we'll document the change in the boundary in another document.

Schedule for completing all the 5-year reviews will depend on award of the SOW from the Navy. Barbara hopes the award will be in the next 45 days, so all the documents should be done by the end of March. But we also need to have the public comment period done and a Final issued. With this in mind, the OPT agreed that the Finals are to be issued by May 30, 2003.

GW Exclusion Zone: Rick Allen is concerned about the most recent detections of MCPA, arsenic, and antimony in the boundary wells. Concerned that we can't consider pulling back the zone until we determine if these are real. Also concern that the new dry retention basins and the removal of all the impervious area that was over the Grinder may change GW hydraulics. Dave G. recommended installing a new well between the dry ponds and the Grinder waste locations.

Note: The "new well" clusters along Glenridge that had the detections of MCPA, arsenic, etc. have been destroyed again. They no longer exist.

Steve T. would like to have Nodarse provide GW modeling info they may have done for the retention basin and recommendations for new well locations to support their new desired GW restriction zone.

ACTION ITEM: Barbara to call John Classe this week to have Dave Twedell get Rick A. an electronic CAD drawing showing the new grades, GW restriction zone boundaries, landfill location, etc. relative to the new development. Should show the new basins in the NW corner, utilities, structures, roads, etc that will help us evaluate potential locations for new wells. Twedell also to be told that for our January 2003 OPT meeting in Orlando we would like to see them present their modeling info on impact of the new infiltration basins and changes in grades and impervious area above the landfill on groundwater hydraulics. This to support developer's request that we pull back the GW exclusion zone. We want them to defend what they want to do with the exclusion zone, and also provide us with information to help us decide where the new wells could go.

ACTION ITEM: Dave G. to speak to Jean Burnette (City's real estate division) about sketches and legal description of the new no-dig zone. This was supposed to be sent to Dave G., but he hasn't seen it yet.

OU2 Site Cover

Golf course site cover inspection hasn't occurred yet. Weeds have grown in on the landfill cap itself, and it's pretty well vegetated now. If we need to add some cover, it will likely occur during the second quarter (Jan-Mar 2003).

Tt finished 3rd quarter monitoring in September. Report of the June monitoring went out in September too, and Steve M. doesn't recall anything unusual in the data. Still waiting for EPA review of the Draft OU2 FS that was issued in August 2001. **ACTION ITEM:** Greg F. to look into EPA comments on this document.

Barbara hoping to find out this week on GOAA's plans for the OU2 drainage ditch and their retention basin plans. Dave G. needs some assurances on the ditch before he is comfortable on the monitoring only recommendation in the PP and ROD. Concern is that this ditch is a component of the remedial action by capturing the plume. Because of all the LUC issues for OU2, the ROD isn't going final anytime soon. Dave has no problem going forward with the monitoring plan, but we should not issue the PP for public comment until the LUC issues are resolved and we have some idea when the ROD can be issued.

Barbara spoke to GOAA during the break. They will be providing design info for their retention basin to her tomorrow.

OU 3 (Teresa (SA8) and Jim Davis (SA9) (Tt))

Ideally the wells actually within the wall should be ND. This is true at SA 8. Wells OLD-08-25 and OLD-08-24 installed to monitor underflow - they are screened 26-31 ft bls, and the wall only extends to 25 feet. Arsenic exceedance in OLD-08-25, so we'll probably be seeing this in -24 soon. Also recall that SA8 was the site where the equipment couldn't get the wall as close to the lake as desired. The wall is actually in the plume a bit. But there is a lot of positive indication that the wall is working. Barbara has recently submitted her report to Congress that estimates a 5-10 year period before the groundwater is treated.

At SA 9 the wall is ahead of the leading edge of the arsenic plume. Based on the data, the wall is still ahead of the plume, so there isn't yet much evidence showing effectiveness. The arsenic hasn't really reached it yet.

Barbara: Any idea if or when we may need to add more alumina? **Jim Davis**: Did a worst-case calc and showed years (something like 6 years) of GW absorptive capacity. But GW sulfates are also absorbed, and this could affect the long-term absorptive capacity for GW. Next spring Tt will take a sample of the wall and evaluate the remaining absorptive capacity.

Dave G: How do the hydraulics look? **Teresa:** Looks fine. No change in GW potentiometric surface.

Jim D: Had some turbidity problems while sampling. So went ahead and collected filtered and unfiltered. There is no significant difference between the two sets of samples, so it looks like we are definitely dealing with dissolved arsenic. Turbidity therefore not that much of a concern.

OU 4 Update (Steve T, Tom Spriggs (by phone), Tom Palaia (by phone))

Second quarter 2002 report will establish baseline for NA, phyto, re-assess antimony, re-assess VOC plume. Third quarter report will include some of this info too. Cross section of PCE data shows some significant concentrations down at well -17C. Little pool of it in the vicinity of the source area.

P&T running very well. Influent concentrations are dropping (from 500 ppb in May 2001 to 95 ppb in Sept 2002). Little impact to the extent of the VOC plume. Some trends in a few wells that may be statistically significant, overall looks stable.

Phyto: Can't see building anymore! Average poplar and cottonwood height exceeds 18 feet. Average willow height exceeds 6 feet. Canopy closing in over the wetland. Dug out 6 trees on Oct 9 along with Univ. of Florida who provided the cottonwood clones. On east side of the building found a root system had extended over 10 feet down. Root systems looked very healthy and growing as planned.

Collected microbe samples from 10 wells. One upgradient control, and the rest within the plume. Diverse bacterial community. Majority are gram-negative, which utilize a wide range of carbon sources. Also methanotrophic bacteria are present. Also gram-positive bacteria are present that are known to degrade PCE and TCE. This is considered baseline, and don't think we are seeing any impact of the trees yet.

Current NA comparison to the old Harding Lawson data from 1998 was similar. Low TOC, similar scores. Electron donors are low. Low concentrations of competing electron acceptors. But data supports the current plan of trying to enhance the dissolved TOC. Negative indicators include no downward contaminant trends, ORP and DO a bit higher than we'd like, absence of elevated chloride, and low concentrations of TOC.

ISCO: Going through the submittal process. Dealing with asbestos/structural issues (asbestos dropping from pipes in the work area), drilling Nov 2002, equipment installation scheduled for Jan 2003, and testing and startup in Feb 2003.

For 2003 will continue with quarterly monitoring reports. NA, phyto, and antimony plumes monitored semi-annually. Construction documentation report after chemox is installed to document phyto and ISCO as-builts. Then issue tech memos for chemox during operation, followed by a Final Report after system shutoff.

SA 39 GW Discussion (Steve T. and Allan Jenkins)

We have three GW zones, with the C-zone wells below the cemented sand layer. Replacement wells all have an "R" in their name on the figures. GW flow in all three zones is to the SE. Pretty certain the A and B zones are controlled by Lake Gear. C zone has been a question. But the current data shows that the C-zone may be discharging upward to the bottom of the lake.

A zone looking pretty good. Had the veggy oil injection (open circles on figure). Flirting with GCTL. B zone a few more exceedances, stair-stepping down to the SE from the shallow zone.

In the C zone at well 32cR we see 43 ppb from April 2002. Historically, we've had 27 ppb in 1997 and 26 ppb in 1999 (these wells are now gone). This well on the downgradient edge is kind of a sticking point as far as OPS determination goes.

Steve M: Tt has put a hold on the OPS determination, primarily due to the data from this well. Would like to see more sample results from 32cR. **Greg F:** Agree. This is not OPS right now.

We discussed funding. Steve T. has completed his scope. Plan is for the EMAC to pick up on monitoring, but that won't happen until May 2003. SA 36 is in the same boat. If we cut down on the number of wells and limit the sampling to VOCs, Steve T. thinks he'll have the funding. **ACTION ITEM:** Steve M. to provide a list of wells and parameters for a different sampling event. Steve T. to then evaluate if he has the funding to do it.

Got a thumbs-up consensus on this approach.

Dave G. asked that Steve T. elaborate on his concern over Nodarse's work. **Steve T:** Not a problem now, but over the last couple of months have had trouble getting water levels consistent with historical info. Could have been due to lots of rain, could have been bad survey data (it was). So Steve T. had his surveyor do it again. And some of the wells may have been cut down more after the top of casing was surveyed. Initially had some concerns over the well installation method (not doing it the way we would

have), but Steve T. can't quite remember what the issues were. Dave Twedell told Steve T. it would be addressed and it wasn't an issue.

What we have now seems to be working fine.

Pete's Feedback

Team dynamics very good. Good participation and trust. Humor. Focused. Flexible agenda and completed all the business items. Did see energy level drop off towards the end of the first day. Maybe because folks flew in that morning. Some overload at times. Started a bit late this morning to avoid having trouble finishing on time. Check in may be a little too long. Got a lot of action items. Teams measured by how many they produce and how many get closed. We made a lot of decisions and took consensus. Good teams do that. So Pete's only thing is that a bit better time management might help. Doesn't think we should worry to much about a few business sidebars, as we have a small team and the sidebars we had were all business. Steve M. did a great job leading on short notice.

Parking Lot Items

1) OU3 & OU4 abstract for Navy Award. Telecon to be scheduled. Dave only interested in content, not so much how it's put together. **ACTION ITEM:** Steve T. and Steve M. to get together. Also will check the CNO website for info.

2) Project Management Schedule. Expand on the document log. Mark S. to look through minutes and recommend other milestones we may have discussed.

CRITIQUE/CHECKOUT/AGENDA

+'s	Δ's
Lots accomplished.	Dave & Wayne not available
Teresa's Grayson's input was welcome	Lack of some handouts for Dave G.
FDEP's comments on FOSET were helpful	LUC indecision

Future Meeting Schedule

January 15 & 16 in Orlando (RAB)

ACTION ITEM SUMMARY
October 2002

ACTION ITEMS (CARRYOVER)

1. **Barbara N.** to contact GOAA and discuss plans for the drainage ditch that intercepts the GW plume coming off OU2. Dave G. concerned that we are relying on the ditch to intercept the plume, yet the ditch is not on Navy property and we have no control over it. Navy would be looking for an agreement with GOAA to ensure no changes to the drainage ditch in this portion of the site. **Barbara spoke to GOAA on 10/29 during the OPT meeting, and GOAA promised they would provide their plans for the OU2 drainage ditch and new retention basin on 10/30.**
2. **Steve T.** to evaluate SA55 (Area C) for possible soil removal to eliminate need for LUC. May need to discuss other LBP and asbestos issues for the "clean" part of Area C.
3. **Steve T.** to inspect areas of OU 2 where the golf course was doing work to determine if additional soil cover will be required. **LEAVE OPEN**

ACTION ITEMS (Completed in October)

1. **Barbara N** to contact District people (Jim Bradner), Program Manager for Solid Waste in FDEP's Central District office to determine how long OU 1 landfill may need to be monitored, and whether there needs to be some coordination with them to determine future GW monitoring locations. **DONE Finally spoke to Bradner. District is deferring to whatever Dave G. and FDEP in Tallahassee want. Barbara told him we are doing the 5-year review now. District does not have any particular guidance for old landfills.**
2. **Steve T.** to provide Steve M. with a soil removal summary memo for SA 18 and SA 54 (also for SA 16?). Focus on SA 18 first, because it's a NFA transfer. Then SA 16 & SA 54. **SA 16 is done, but needs to be formatted as a completion report. SA18 emailed out. So was SA54.**
3. Barbara N. would like to submit OU 3 PAB project for Navy recognition. Scott N. to provide a sample submittal (MacGregor project).**DONE Steve M** will work on it. Also add OU 4 phyto to this **(Steve T)**. **Scott: Not trivial. Probably need to have several folks sit in one room and focus on it. Need to put an abstract together for OU3 & OU4. Needs to be submitted to the Navy by early November. Steve M. to lead. DONE**
4. **Scott N.** to discuss meeting minutes with Tier II, to determine if Tier II should receive Mark S.'s technical minutes, in addition to Tony M.'s facilitator minutes. Maybe we need a distilled version of the long technical OPT minutes to provide Tier II with a concise summary of our issues. **DONE. Tier II moving towards requesting a one-page summary of technical issues from each meeting. But not asking for it yet.**
5. **Steve M.** will ask Paul Calligan to prepare a summary and a graph illustrating GW trends at MOP sites for the RAB. **DONE**
6. **Wayne H., Paul Calligan**, and **Dave G.** to discuss possibility of changing sampling frequency at long-term MOP sites to semi-annually rather than quarterly. **DONE**
7. **Steve M.** to prepare a presentation for the next OPT meeting on the groundwater hydraulics of the OU 3 PABs. **DONE**
8. **Steve M.** to schedule a conference call to discuss OPT comments to the OU 1 5-year review once that document has been issued. **NOT NECESSARY. OVERCOME BY EVENTS. ACTION ITEM CANCELLED.**

ACTION ITEMS (NEW - TO BE DISCUSSED IN JANUARY)

1. **Scott N.** to ask Tier II for written guidance regarding LUCs and how they relate to OPS and property transfers.

2. **Greg F:** Will put together something for SA36 while we wait for a Tier II letter. This will be the minimum language for LUCs that EPA needs for DD and OPS. Won't be minimal, as he would prefer a letter from the Navy saying what they can live with. Will have this by November 8.
3. Comments to ET document to be emailed to Lawson at AndersonL@ttnus.com.
4. **Steve M.** and **Teresa** to estimate the cost for full scale treatment of the neighborhood using iSOC.
5. **Barbara** to call John Classe this week to have Dave Twedell get Rick A. an electronic CAD drawing showing the new grades, GW restriction zone boundaries, landfill location, etc. relative to the new development. Should show the new basins in the NW corner, utilities, structures, roads, etc that will help us evaluate potential locations for new wells. Twedell also to be told that for our January 2003 OPT meeting in Orlando we would like to see them present their modeling info on impact of the new infiltration basins and changes in grades and impervious area above the landfill on groundwater hydraulics. This to support developer's request that we pull back the GW exclusion zone. We want them to defend what they want to do with the exclusion zone, and also provide us with information to help us decide where the new wells could go.
6. **Dave G.** to speak to Jean Burnette (City's real estate division) about sketches and legal description of the new no-dig zone. This was supposed to be sent to Dave G., but he hasn't seen it yet. (OU1)
7. **Greg F.** to look into status of EPA comments on the OU 2 FS.
8. **Steve M.** to provide a list of wells and parameters for an additional groundwater sampling event for SA39. Steve T. to then evaluate if he has the funding to do it.
9. **Steve T.** and **Steve M.** to get together and plan for CNO environmental award submittal. Also will check the CNO website for info.
10. **Mark S.** to look through recent meeting minutes and recommend project milestone dates we may have discussed. These to be included in a Project Management Schedule that needs to be submitted to Tier II.

ACTION ITEM PARKING LOT

As discussed by the OPT at the October 2002 meeting in Oak Ridge, Tennessee, this Parking Lot has been established to document Action Items whose resolution is outside the control of the OPT itself. These action items are primarily related to the LUC issues awaiting resolution by USEPA and DoD at a national level.

1. **Greg F.** was asked to provide the EPA's preferred LUC language to the Navy within 30 days (Oct 2002). The LUC language was also to be provided to the developer. This needs to go into the draft DD for SA 36 and sent up the Navy chain for approval. However, Scott N. got a mixed read on this from from John Johnson. At a Tier II meeting, John J. said to wait. This seemed like a reversal to the idea that the project teams continue to develop their own language as they see fit. **Greg F:** Language from EPA's point of view is easy. But not clear how this is going to shake out between EPA and DoD headquarters. Letter went to EPA from OSD (Sec of Defense) that DoD sort of agrees with EPA here (Scott's interpretation). Dave G. has seen the latest letter, and the post-ROD authority has been resolved. DoD agrees EPA has post-ROD authority. But they are leery about LUC issues that EPA wants to write into the ROD. Things like inspection frequency and reporting frequency. At Cecil, the EPA RPM is preparing a Draft ROD with language the EPA likes, and then that will be submitted to the Navy. **This paragraph added to parking lot after Oct 2002 OPT meeting.**
2. **Steve T.** and **Barbara N.** will work to prepare the contents of an MOU between the Navy, Army, and FDEP describing how LUCs will be maintained at SA 54. OPT recently concluded USACE in Huntsville would prepare draft text, but Dave has been told that FDEP may not agree with the MOA language. Barbara has also not yet called Huntsville. **This item to remain OPEN until LUC issues are resolved. Added to Parking Lot after Oct 2002 OPT meeting.**
3. **Greg F.** will send us his definition of OPS, and exit strategy guidance. OPS definition was emailed out. **Working on exit strategy idea (not guidance). Still working on this with contractor. Added to Parking Lot after Oct 2002 OPT meeting.**
4. **Greg F.** to provide formal comments to SA36 OPS Report. This is tied into the exit strategy issue. **HQ on board, but right now Greg F.'s attorney has it. Added to Parking Lot after Oct 2002 Meeting.**

In accordance with discussions during Training in September 2001, here are the ground rules (Code of Conduct and Process) to review prior to the next meeting.

GROUND RULES

Code of Conduct

- Allow speakers to complete their thought.
- Be forthright (no hidden agendas)
- Be on time (10 cents per minute to be given to person who purchased refreshments).
- Invoke the 100 mile rule (avoid distractions; i.e., conducting non-OPT business).
- Be open and honest.
- Be professional.
- Bring Teammates up to speed.
- Use I statements.
- Be courteous to the speaker; no side conversations.
- Leave your ego and "business coats" at the door.
- Stay for the hard parts.
- Fix the problem, not the blame.

Process

- Team leader, Timekeeper and recorder rotate alphabetically progressing in this order: timekeeper, recorder, team leader, participant.
- Check-in: personal up-dates; read ground rules; review agenda, ground rules, action items and +/Δ.
- Proxy: Absent members have the discretion of designating a proxy to represent his/her views at the meeting. The OPT will not deliberately make a decision contrary to an absent member's known views or interests.
- Guests: All guests must be invited by the OPT. The sponsor is responsible to brief guest(s) on the OPT meeting process.
- The Team Leader to confirm that the sponsor has briefed guest(s) on the ground rules. If not, then provide guest(s) with overview of ground rules.
- The OPT and guest(s) shall recite the Ground Rules immediately after the Team Leader calls the meeting to order.
- Close-out: Draft agenda for next meeting; critique meeting; review action items.
- Distribute draft of minutes and Agenda within 7 working days of concluding the meeting. A master copy of the minutes will be maintained and rotated with the recorder.
- Comments or acknowledgment of receipt due back to scribe 7 days after receipt of draft.
- Final minutes and agenda distributed 7 working days before next meeting.
- An action item list with due dates will be maintained and updated monthly.

UST UPDATE AND STATUS
October 2002

MAIN BASE

Bldg 109: Remediation of 109 is completed. The first round of sampling in October had no detects over MCLs. David Twell will resample in January for final closure of site. Original COC Xylene 12,330 ug/L Toluene 22,280 ug/L and Benzene 6280 ug/L

Building 200

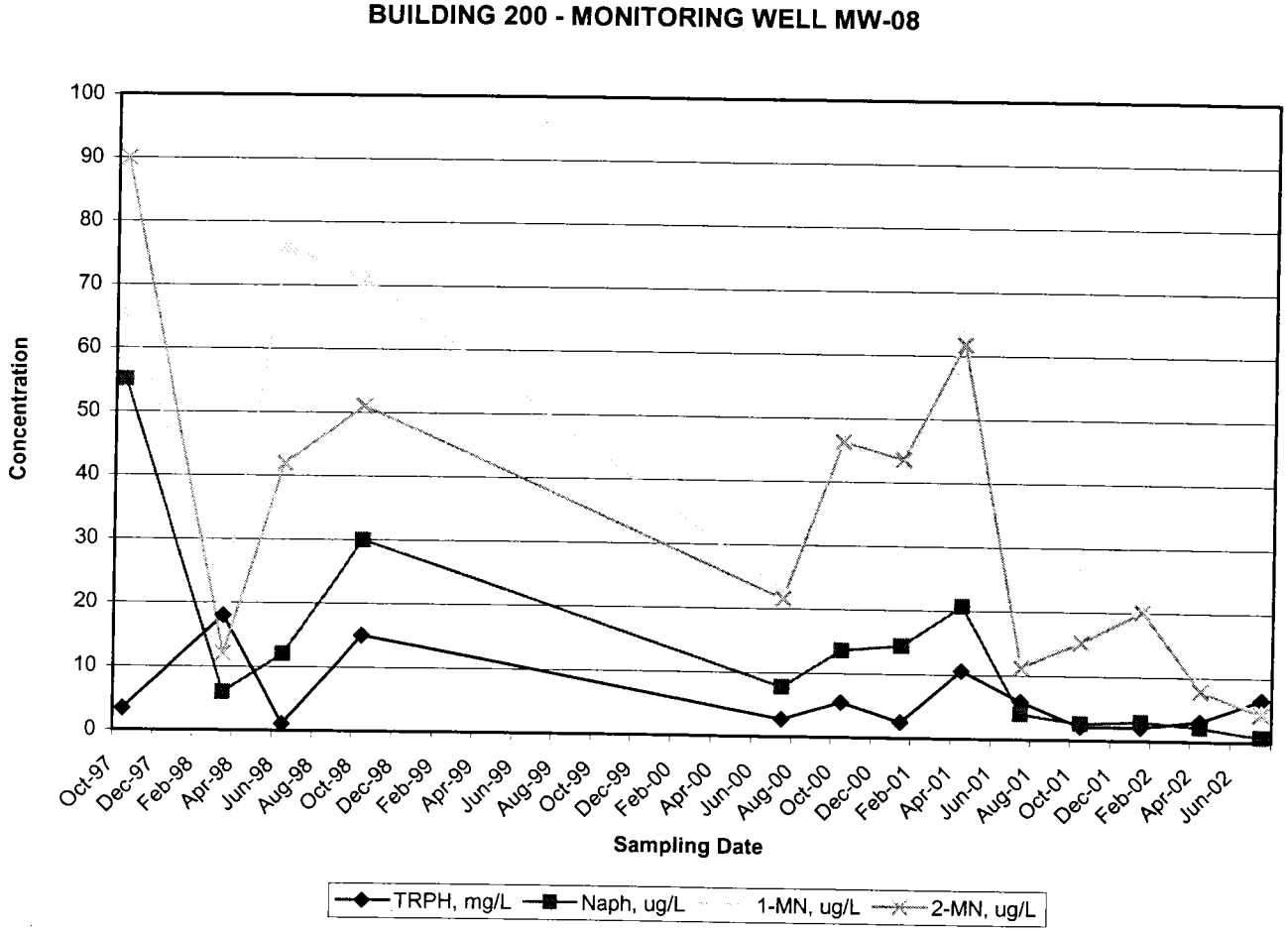
Contaminants of concern: Benzene, PAHs, TPH

Significant Events:

- 1995: Tank removed.
- June 13, 1997: Contamination Assessment Report (CAR) recommending NFA submitted.
- August 10, 1998: Site Assessment Report (SAR) Addendum submitted.
- August 24, 1998: Response to SAR requesting additional sampling issued by FDEP.
- January 8, 1999: SAR Addendum/Monitoring Only Proposal (MOP) submitted to FDEP.
- February 6, 1999: Response to SAR Addendum requesting additional sampling issued by FDEP.
- April 14, 1999: MOP Addendum submitted.
- July 6, 1999: MOP approved by FDEP.

Groundwater Monitoring (Sampling):

- 2000 (July, October); 2001 (January, April, July, October); 2002 (January, April, July).



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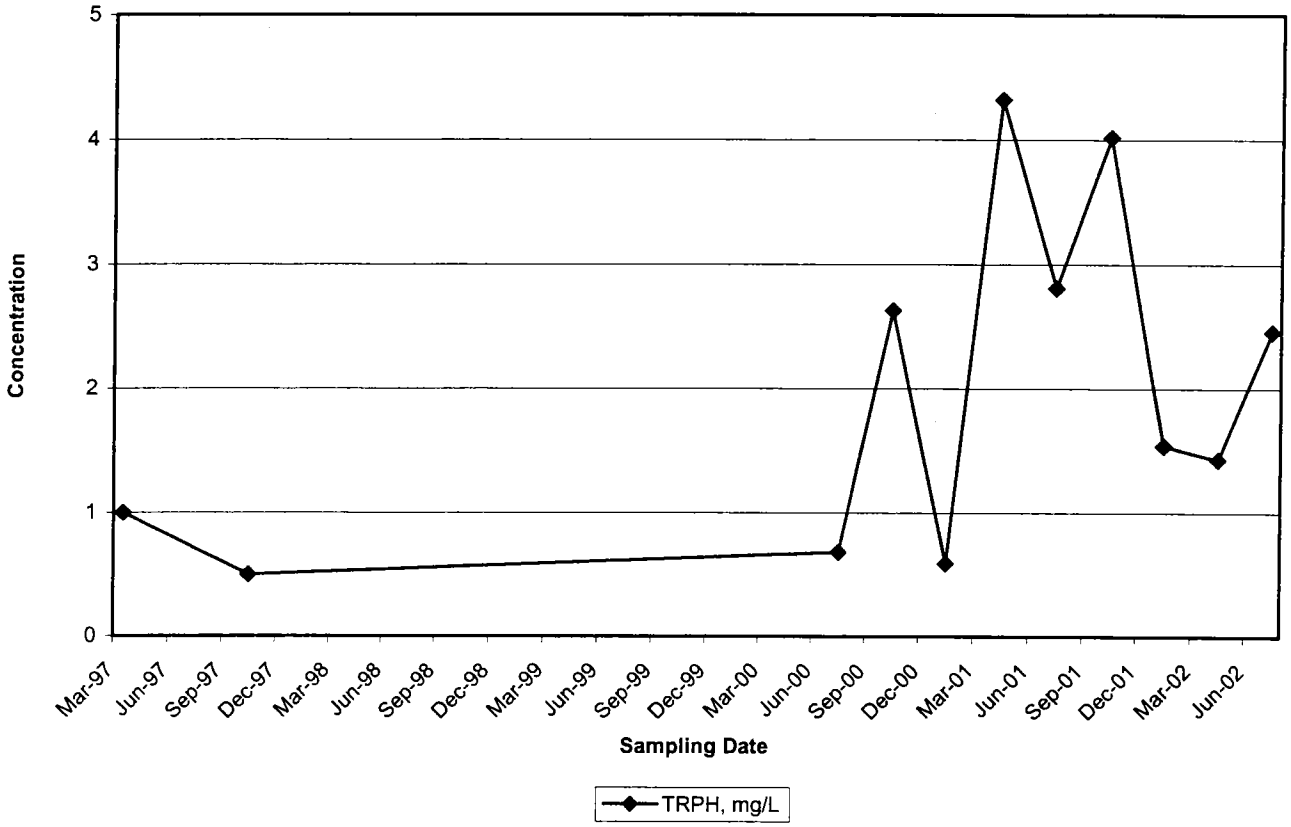
BUILDING 200 - MONITORING WELL MW-10



Building 2080

Contaminants of concern: Xylenes, PAHs, TPH

Significant Events:

- February 14, 1999: Tanks removed by the DET
- June 15, 1999: A Tank Closure Assessment Report (TCAR) was submitted to the FDEP.
- July 7, 1999: A TCAR response letter requesting a Site Assessment was issued by the FDEP.
- January, 2000: A Site Assessment was initiated.
- February 21, 2000: A source removal was conducted to remove petroleum impacted soil.
- September 15, 2000: A Source Removal Report (SRR) was submitted to the FDEP.
- March 16, 2001: A Site Assessment Report (SAR) recommending preparation of a Remedial Action Plan was submitted to the FDEP.
- August 21, 2001: A SAR response letter requesting installation and sampling of a vertical extent monitoring well was issued by the FDEP.
- December, 2001: The vertical extent well was installed and sampled.
- May 30, 2002: A SAR Addendum recommending natural attenuation monitoring was submitted to the FDEP.
- July 26, 2002: The FDEP requested additional information and clarification of some data provided in the SAR Addendum.
- ***September 30, 2002: Supplemental SAR Addendum submitted to the FDEP.***

Building 2273

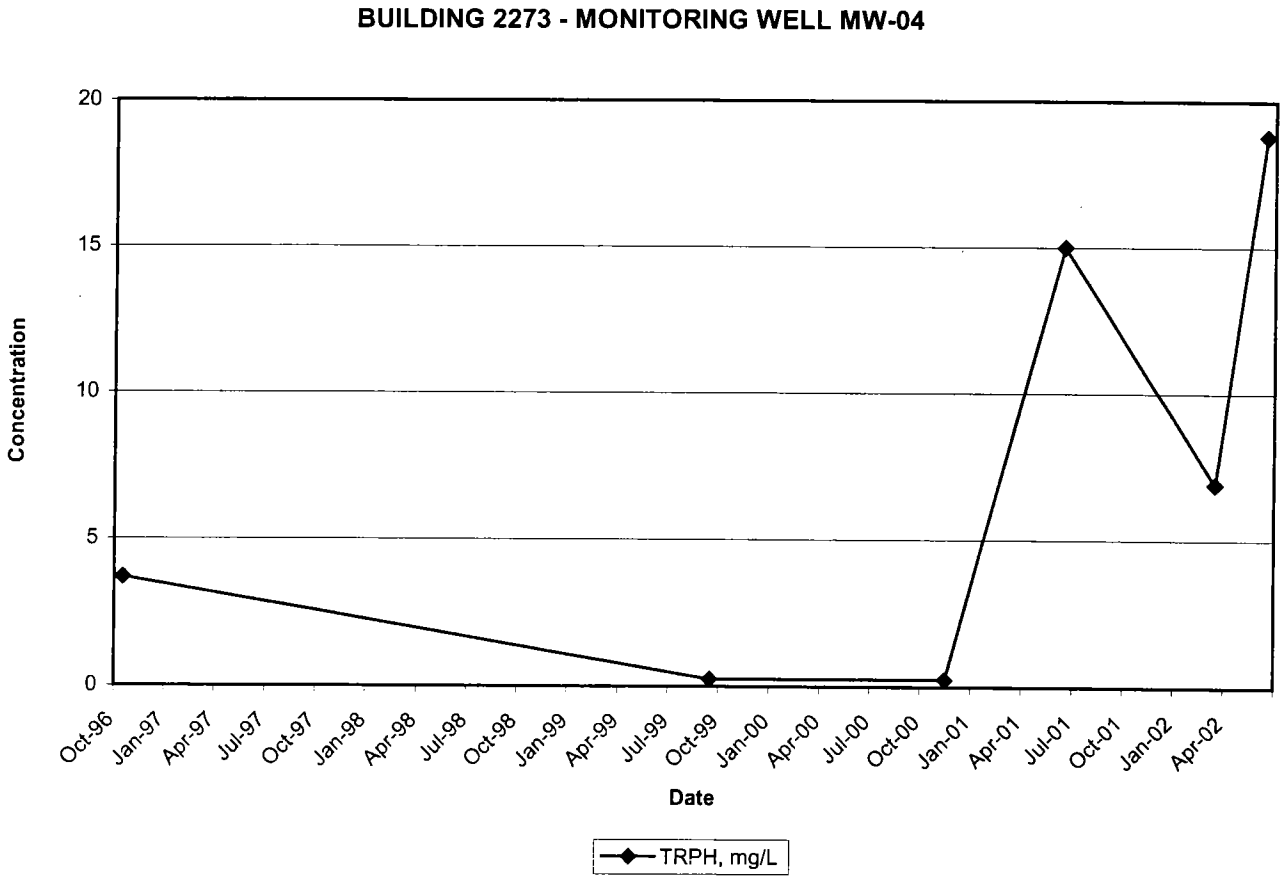
Contaminants of concern: Benzene, Xylenes, PAHs, TPH

Significant Events:

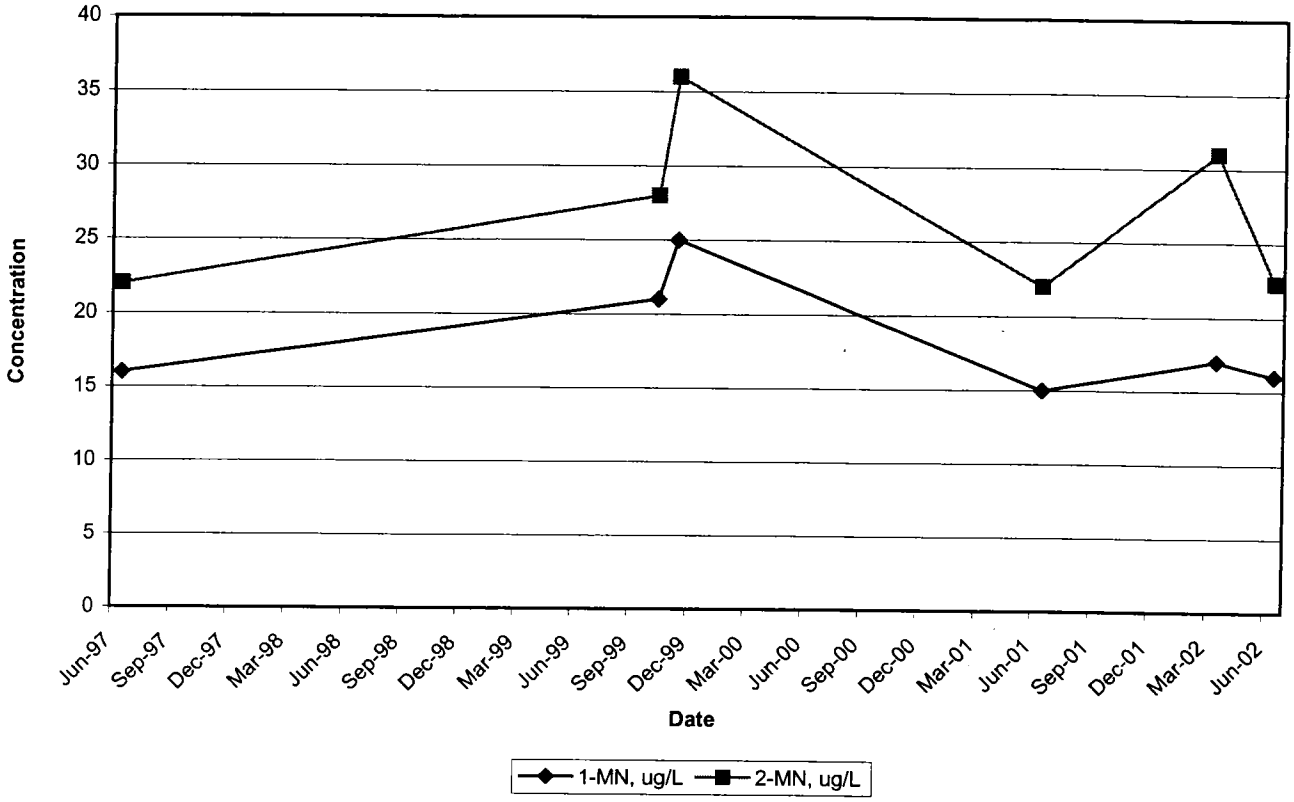
- 1996 – 1997: Analytical results from sampling performed by ABB-ES detected BTEX exceedances.
- September 1999: Monitoring wells destroyed by the City of Orlando's contractors were replaced and sampled.
- April 2000: A downgradient deep monitoring well was installed and sampled. The sample results showed an exceedance of 1.2 ppb benzene.
- November 3, 2000: Draft Site Assessment Report (SAR)/Monitoring Only Proposal (MOP) was submitted to the OPT.
- March 30, 2001: A Site Assessment Report (SAR) recommending installation of additional deep monitoring wells was submitted to the FDEP.
- May 2001: SAR response letter concurring with recommendation for additional wells issued by the FDEP.
- April – June 2001: Additional monitoring wells installed.
- March 15, 2002: A SAR Addendum recommending a natural attenuation monitoring was submitted to FDEP.
- March 19, 2002: The Groundwater Sampling Work Plan was issued to the OPT.

Groundwater Monitoring (Sampling):

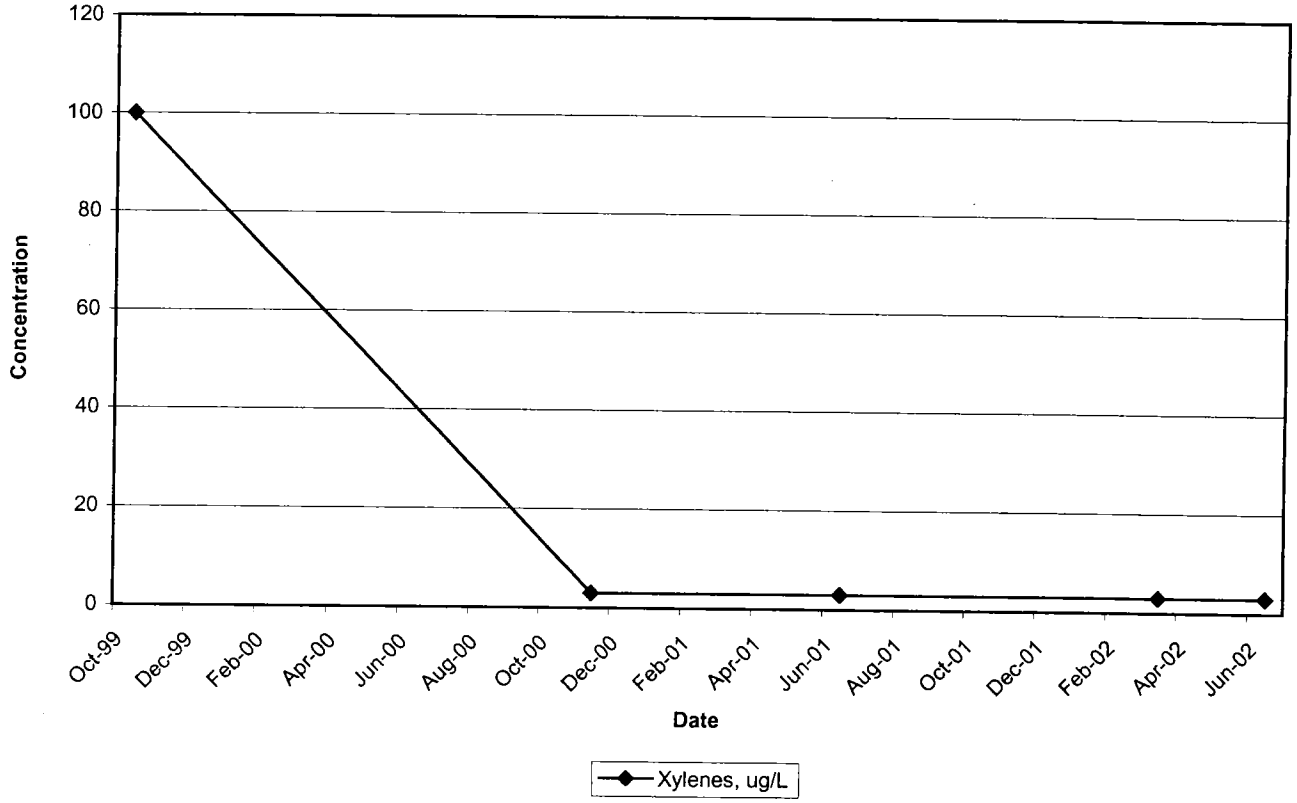
- 2002 (March, June, ***September). A data report for the June '02 sampling event was issued 9/07/02.***



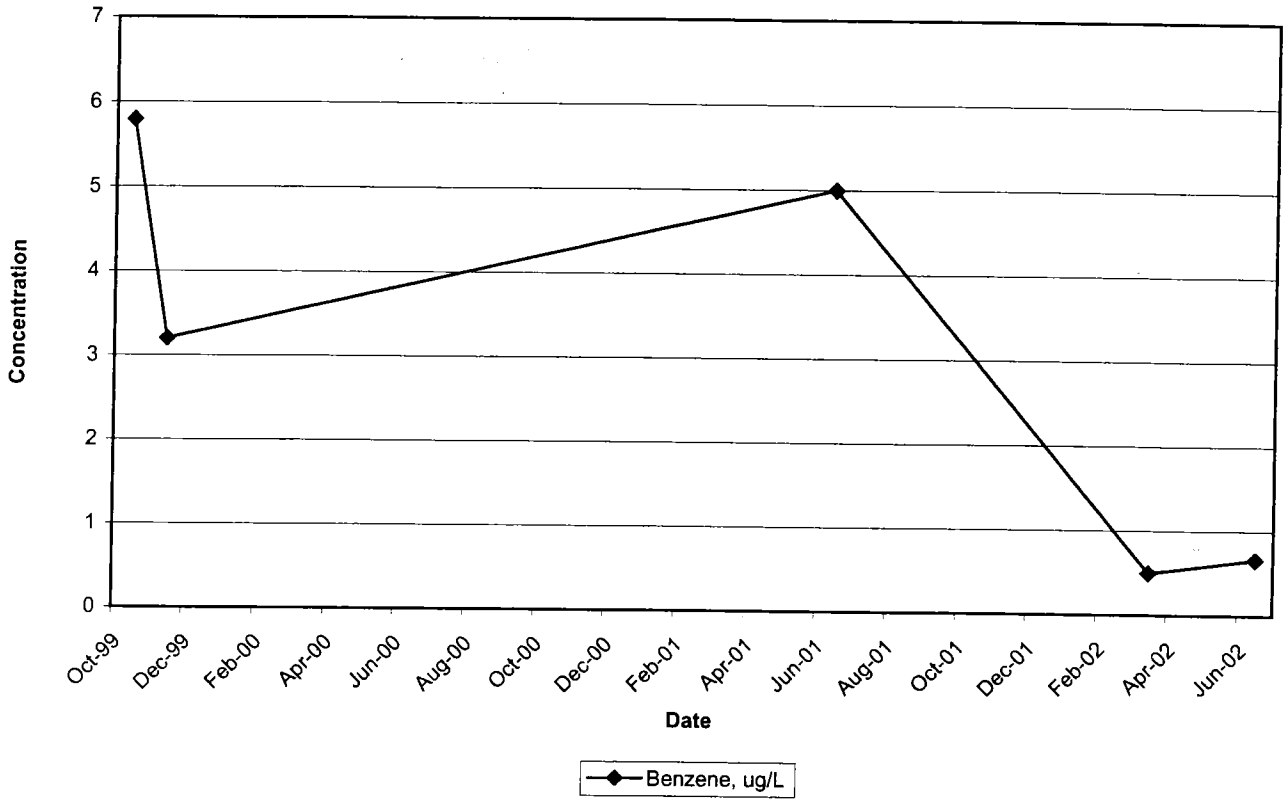
BUILDING 2273 - MONITORING WELL DW-05



BUILDING 2273 - MONITORING WELL DW-06



BUILDING 2273 - MONITORING WELL DW-07



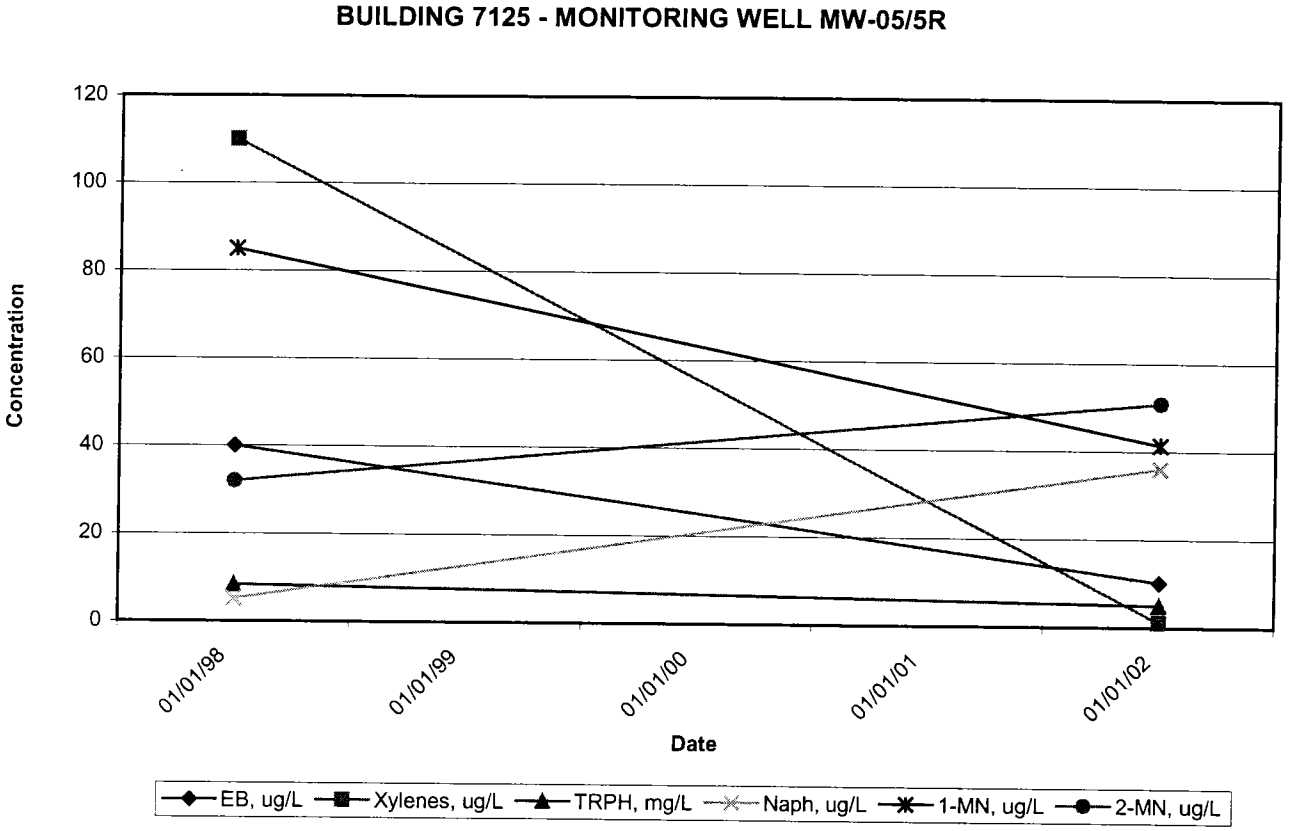
McCOY ANNEX

Building 7125

Contaminants of concern: BTEX, PAHs, TPH (Bug Site)

Significant Events:

- January 15, 1999: Tanks removed by PWC Pensacola.
- January 15, 1999: A Site Assessment Report (SAR) recommending a source removal was submitted to the FDEP.
- March 13, 2000: A source removal was conducted to remove petroleum impacted soil.
- June 29, 2001: A Source Removal Report (SRR) was submitted to the FDEP.
- August 3, 2001: The SRR was approved by FDEP.
- May - July, 2002: Replacement monitoring wells were installed and sampled.
- ***A SAR Addendum recommending natural attenuation monitoring is currently in preparation.***



Building 7151

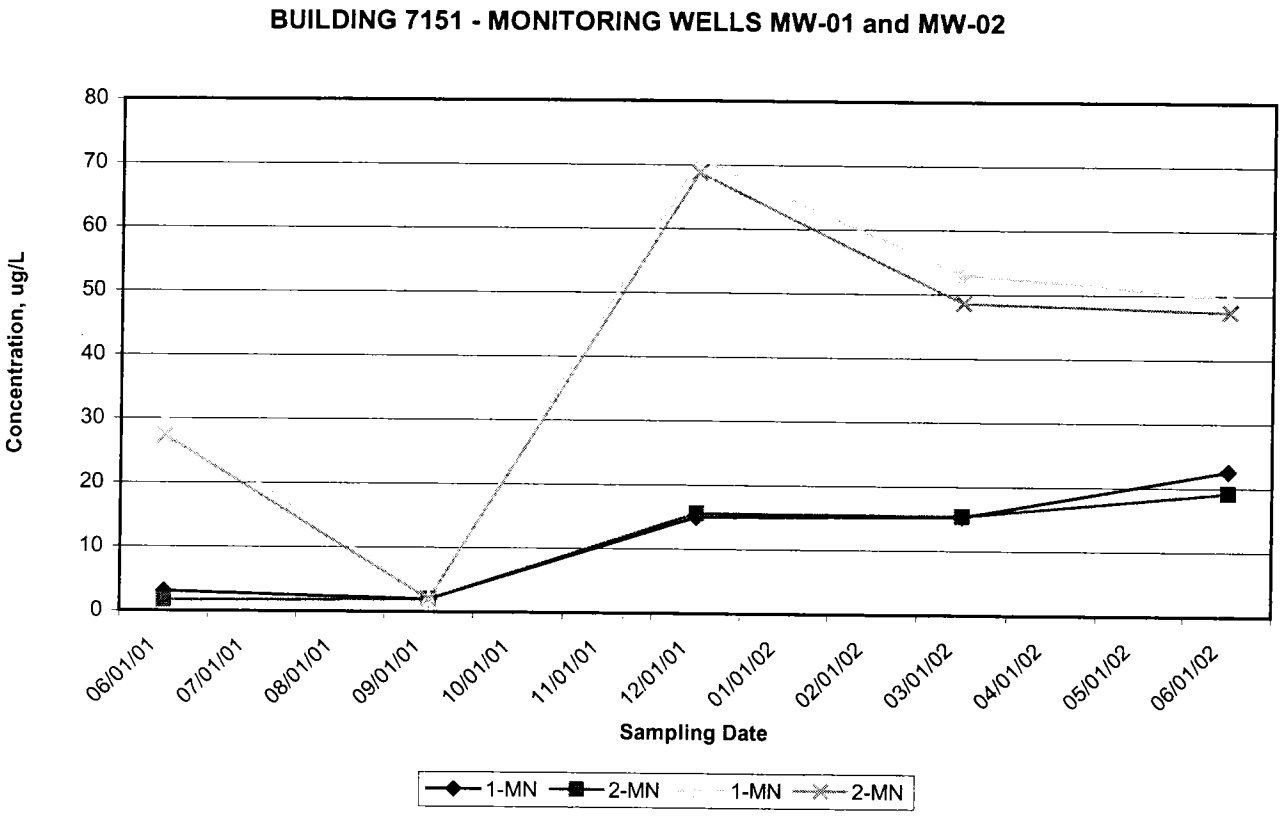
Contaminants of concern: Benzene, PAHs

Significant Events:

- February 14, 1999: Tanks removed by the DET.
- June 15, 1999: A Tank Closure Assessment Report (TCAR) was submitted to the FDEP.
- July 9, 1999: A TCAR response letter requesting a Site Assessment was issued by the FDEP
- January 2000: Site Assessment field activities were initiated.
- March 13, 2000: A source removal was conducted to remove petroleum impacted soil.
- November 3, 2000: A Source Removal Report (SRR) was submitted to the FDEP
- November 28. 2000: A Site Assessment Report (SAR) recommending natural attenuation monitoring was submitted to the FDEP.
- March 15, 2001: A SAR response letter and Natural Attenuation Monitoring Plan Approval Order were issued by the FDEP.

Groundwater Monitoring (Sampling):

- 2001 (June, September, December); 2002 (March, June, ***September***).



Bldg 7174: Construction documentation report was submitted in February 2000. Biosparge system has been operating properly, and bi-weekly O&M of the biosparge system on going. First quarterly GW monitoring was completed in February 2000. Harding collected samples from 10 unlabeled drums for pre-disposal characterization. Drums picked up by TtNUS disposal contractor the week of 8/28/00. The Draft second quarterly groundwater monitoring report was submitted to the Navy and the BCT on 9/21/00 and approved by the Navy on 10/2/00. The third sampling was report was submitted to the Navy in Nov 2000. The fourth sampling event was completed on Dec 4th, 2000. Data indicate all compounds of concern are below cleanup goals. The report has been submitted to the Navy and FDEP. The December data showed that the cleanup criteria for the target compounds had been accomplished. A quarterly sampling was performed in April 2001. The system was turned off approximately a month prior to the sampling to see if any short-term rebound occurs.

The Navy received FDEP input on the post-active remediation monitoring and the detection of MTBE in one well above the FDEP cleanup goal. During a conference call amongst the Navy, FDEP and CCI, FDEP agreed to maintain existing the remediation system in an inactive (but operation-ready) mode and initiate post-active remediation monitoring. A post-active remediation monitoring plan will be prepared and submitted to FDEP for approval. A tech memo was submitted requesting monitoring for 1 year then possible closure if MTBE concentrations drop.

The system compressor was recently stolen in June 2001. A request will be submitted to FDEP to continue post-active remediation monitoring without a replacement compressor, until the monitoring results indicate the system needs to be activated. A post-active remediation monitoring plan was submitted and approved by FDEP. The first round of quarterly post-active remediation monitoring was completed in March 2002. A report summarizing the results of the sampling was submitted in July 2002. The second round of quarterly post-active remediation monitoring was completed in July 2002, and a report summarizing the results will be submitted in October 2002. ***The third round of quarterly sampling was completed in September 2002, and a report summarizing the results will be submitted in December 2002.***

Building 7175

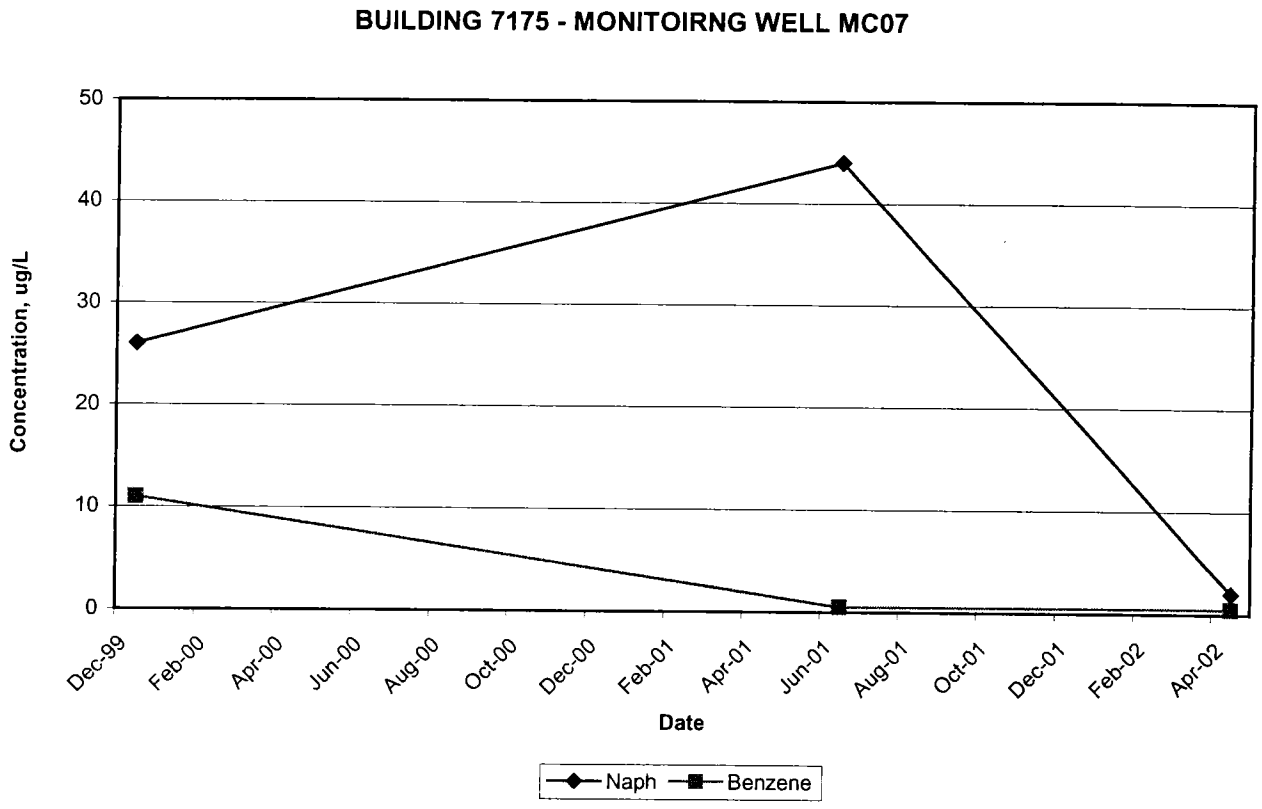
Contaminants of concern: Benzene, Naphthalene

Significant Events:

- February 22, 1999: A source removal was conducted by the DET to remove petroleum impacted soil.
- April 5, 1999: A Site Assessment was initiated.
- June 29, 1999: A Source Removal Report (SRR) was submitted to the FDEP.
- September 15, 1999: A Site Assessment Report (SAR)/Monitoring Only Proposal (MOP) was submitted to FDEP.
- October 27, 1999: A SAR review letter was issued by the FDEP indicating that further assessment was required.
- November 1999 – March 2000: Additional assessment activities were performed.
- May 19, 2000: A SAR Addendum recommending additional assessment was submitted to the FDEP.
- September 7, 2000: A SARA response letter was issued by the FDEP concurring with the recommendation for additional assessment.
- November 2000 – June 2001: Additional assessment activities were performed.
- November 30, 2001: A SAR Addendum recommending a natural attenuation monitoring was submitted to the FDEP.
- February 2, 2002: A SARA approval letter and Natural Attenuation Monitoring Plan Approval Order were issued by FDEP.

Groundwater Monitoring (Sampling):

- 2002 (April, July).



IR UPDATE AND STATUS
October 2002

MAIN BASE

OU 1: Semi-annual sampling and visual landfill inspection as per ROD was completed by CH2M Hill on 02/16/01. A report summarizing the results of the sampling was completed in May 2001. The second sampling event was completed in July 2001. The report summarizing the results of the second sampling was submitted to the OPT in November 2001. A sampling event was completed at the site in late January/early February 2002. A report summarizing the results of the sampling will be submitted in May 2002.

Monitoring wells at the site have been abandoned to allow for construction of the new middle school on the property. Replacement monitoring wells are tentatively schedule for installation in December 2002 following school construction. The next sampling event will occur after installation of replacement monitoring wells. ***A draft 5-year review was issued to the OPT on 09/25/02.***

OPERABLE UNIT 3

Contaminants of concern: Arsenic and pesticides in groundwater.

Significant Events:

- August 1994 – March 1998: Site investigations.
- July 1996: Environmental Site Screening Report for SA 9 issued.
- April 1997: Environmental Site Screening Report for SA 8 issued.
- June 1999: Remedial Investigation/Feasibility Study Report issued.
- August 18, 1999: IRA Completion Report documented removal of 95 tons of pesticide-contaminated soil and 2,886 tons of arsenic-contaminated soil.
- September 2000: Interim Record of Decision stipulated institutional controls on groundwater use and other administrative remedies, groundwater monitoring, and evaluation of three groundwater treatment otpions.
- January 25, 2001: Specifications for Site Monitoring issued.

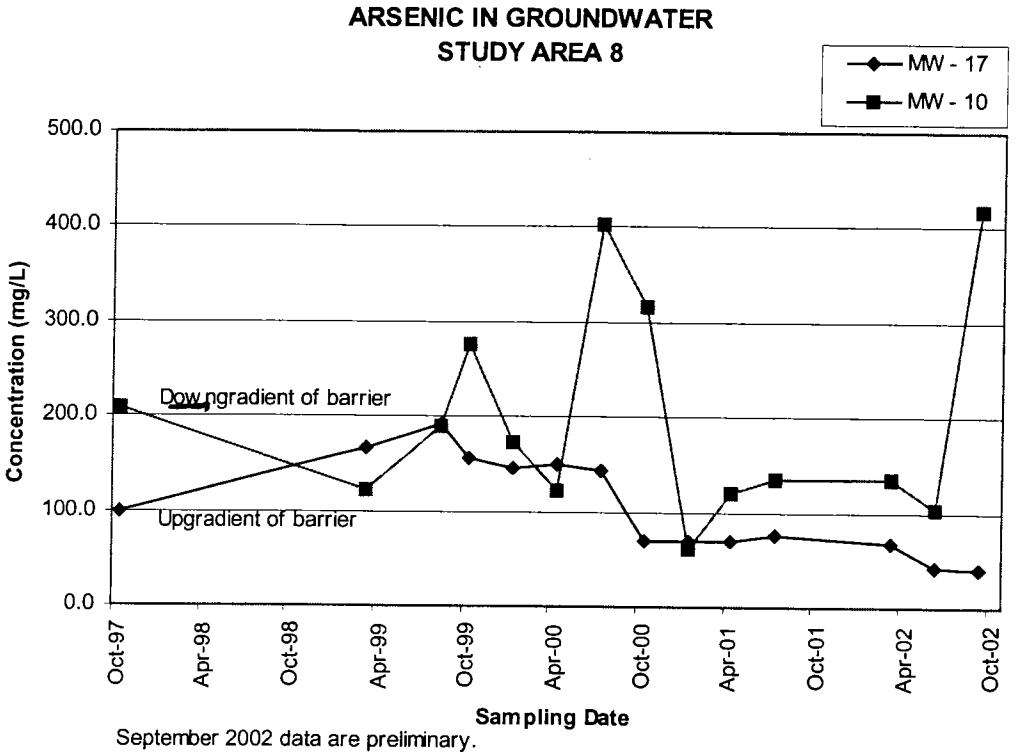
Treatability Study:

- February 2, 2001: Treatability Study Report issued.
- May 2001: Task Order for installation of funnel-and-gate with activated alumina issued.
- August 2001: Borings confirmed lack of a confining layer in which to key a wall for the funnel and gate.
- February 2002: Fact Sheet issued.
- April 2002: Permeable Adsorptive Barriers composed of sand and activated alumina and microwells for monitoring installed.
- Treatablity Study sampling: 2002 (May, June, ***September***). ***A report for the baseline and 1st quarterly sampling conducted in May and June '02 was issued 10/25/02.***

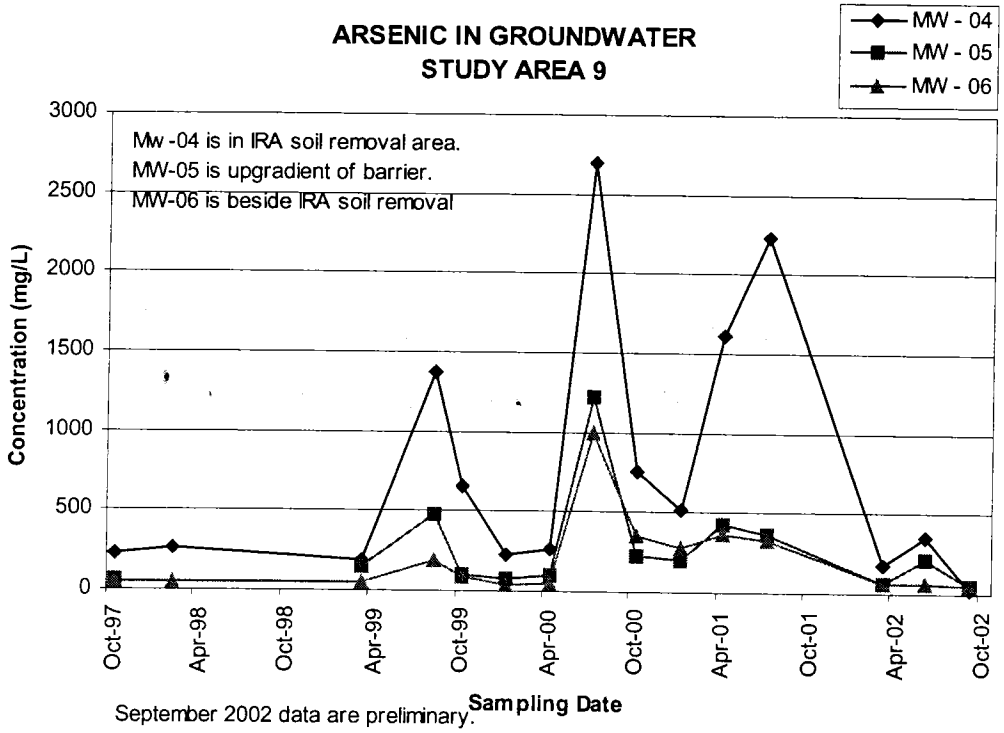
Groundwater Monitoring (Sampling):

1997 (October); 1999 (March, July/August, October); 2000 (January, April, July, October); 2001 (January, April, July, October); 2002 (March, June, ***September***). ***The data report for the June '02 sampling event was issued on 10/16/02.***

Since GW is so slow, we will propose to have sampling event to occur semi-annually



September 2002 data are preliminary.



September 2002 data are preliminary.

STUDY AREA 36

Contaminants of concern – TCE (up to 300 µg/L vs. MCL of 3 µg/L) and PCE (up to 5.4 µg/L vs. MCL of 3 µg/L) in groundwater

Historical Summary: SA 36 is the former Public Works Yard, where lumber, paint, thinners and solvents were stored at one time or another. Vehicles were stored and maintained on the premises. Hazardous and nonhazardous materials, including waste oil drums, transformers, and batteries, were stored here prior to disposal. Sand, gravel, and other construction supplies were staged at Public Works prior to their use throughout the Main Base.

Significant Events:

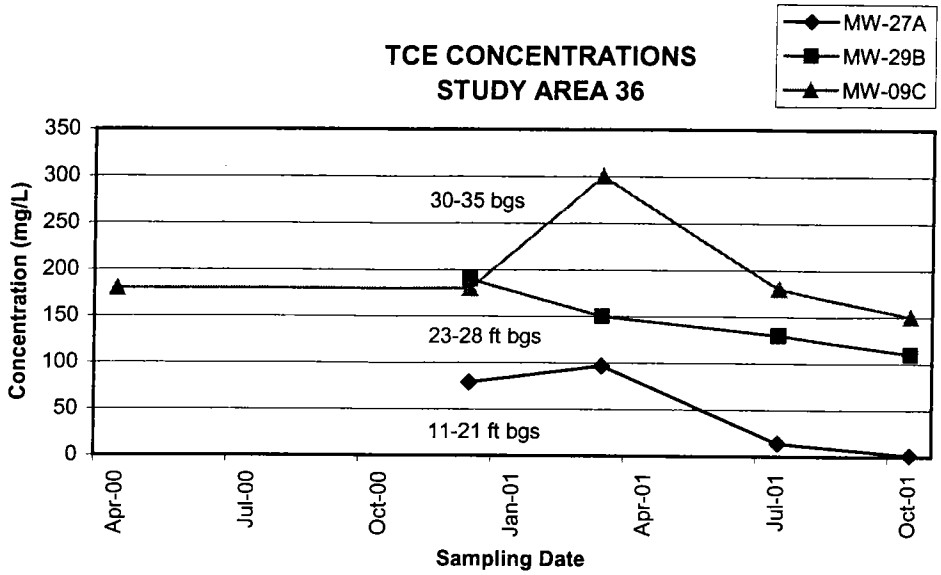
- July – November 1997: Field investigations for site screening
- July 1999: Site Screening Report issued, recommending removal of contaminated surface soil (PAHs, TRPH, arsenic) with confirmation sampling; groundwater monitoring to determine if TCE/PCE levels are decreasing via natural attenuation. If no decrease, consider remedial alternatives.
- April 2000: Additional field investigations to delineate TCE/PCE plume
- A Technical Memorandum on the groundwater investigation at SA 36 was issued 05/21/02 and subsequently approved by FDEP and USEPA. The portion of SA 36 excluding the groundwater contamination was included in the FOST/EBST Addendum 4 issued by the Navy during the week of 06/03/02.
- ***TtNUS issued the draft Site Investigation Report on September 16, 2002. A draft Decision Document for the portion of SA 36 with groundwater contamination is in preparation.***

Vegetable Oil Injection Treatability Study:

- November 2000: Enhanced bioremediation work plan issued.
- January 2001: Injector and monitoring well installation and vegetable oil injection activities (60 gallons into each of 15 wells, a total of 900 gallons – food grade vegetable oil)
- November 2001: Additional 540 gallons of vegetable oil injected into site wells
- December 2001: All monitoring wells abandoned due to development activities in Baldwin Park
- April 2002: Monitoring wells reinstalled for continuing groundwater monitoring
- Draft "Operating Properly & Successfully" (OPS) report issued on 04/05/02
- Monitoring wells at the site were abandoned in December 2001 as part of site development activities at the Main Base. Replacement wells were installed at the site in April 2002, and treatment efficiency monitoring samples were collected from the replacement wells in April 2002. ***CH2M Hill issued a report summarizing the results of the sampling in October 2002.***

Groundwater Monitoring (Sampling):

- Site Screening: 1997 (Nov); 1998 (Jun, Dec)
- Vegetable Oil Treatability Study: 2000 (Dec – baseline); 2001 (Mar, Aug, Oct): 2002 (Apr)


TCE CONCENTRATIONS
STUDY AREA 36
MW-27A
MW-29B
MW-09C
Concentration (mg/L)
350
300
250
200
150
100
50
0
30-35 bgs
23-28 ft bgs
11-21 ft bgs
Apr-00
Jul-00
Oct-00
Jan-01
Apr-01
Jul-01
Oct-01
Sampling Date

OPERABLE UNIT 3

Contaminants of concern: Arsenic and pesticides in groundwater.

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Groundwater Monitoring (Sampling):

1997 (October); 1999 (March, July/August, October); 2000 (January, April, July, October); 2001 (January, April, July, October); 2002 (March, June, ***September***). ***The data report for the June '02 sampling event was issued on 10/16/02.***

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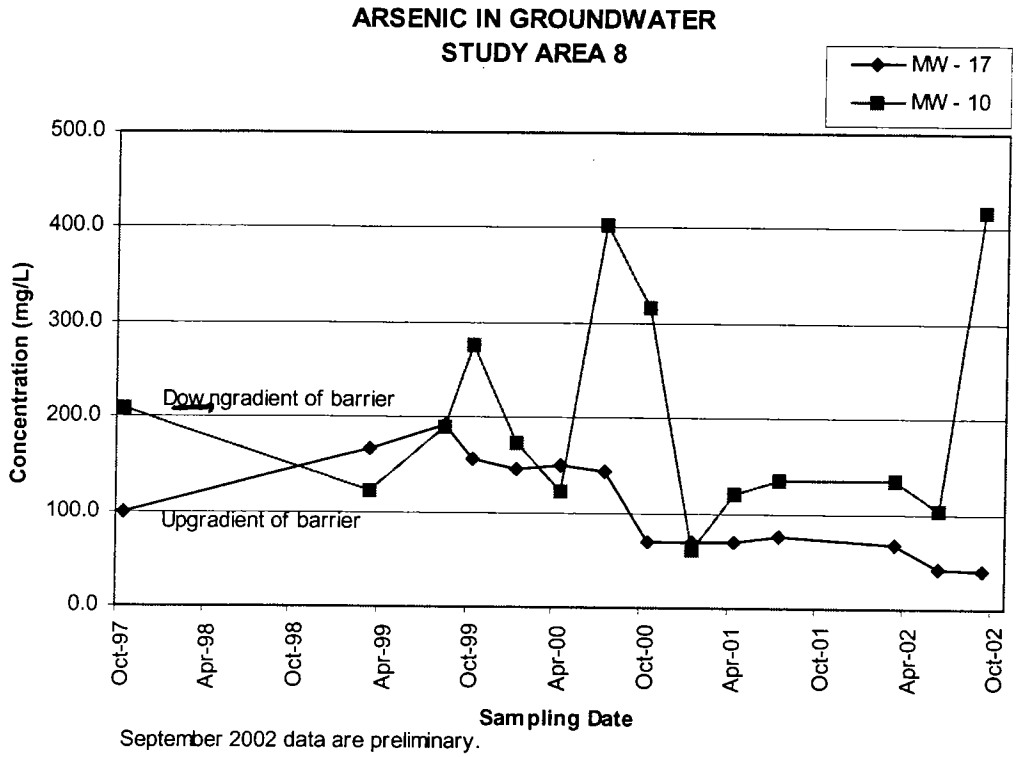
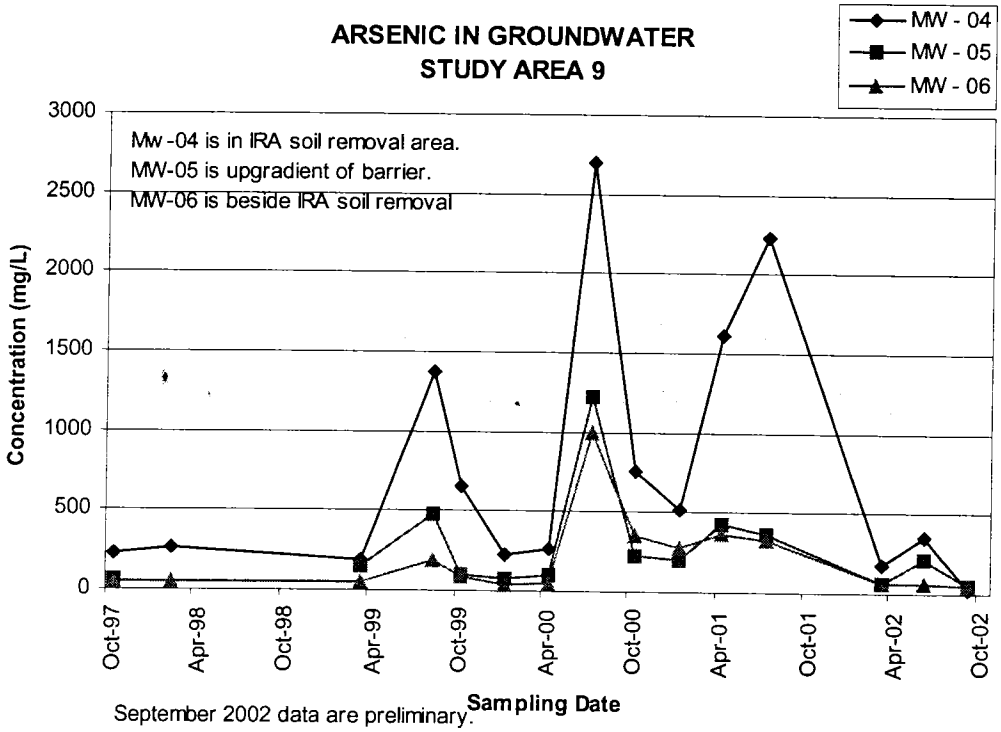


September 2002 data are preliminary.



September 2002 data are preliminary.

STUDY AREA 39

Contaminants of concern – PAHs and arsenic in soil (remediation completed), and PCE in groundwater (GCTL = 3 µg/L).

Historical Summary: SA 39 was a coal storage area for base utilities, and also had hazardous materials storage and functioned as a staging area for solid waste in two large dumpsters with loading ramps, and large items, including brush and trees. It is located immediately south of a known landfill that reportedly accepted medical waste, small armaments, asbestos-containing materials, and household refuse.

Significant Events:

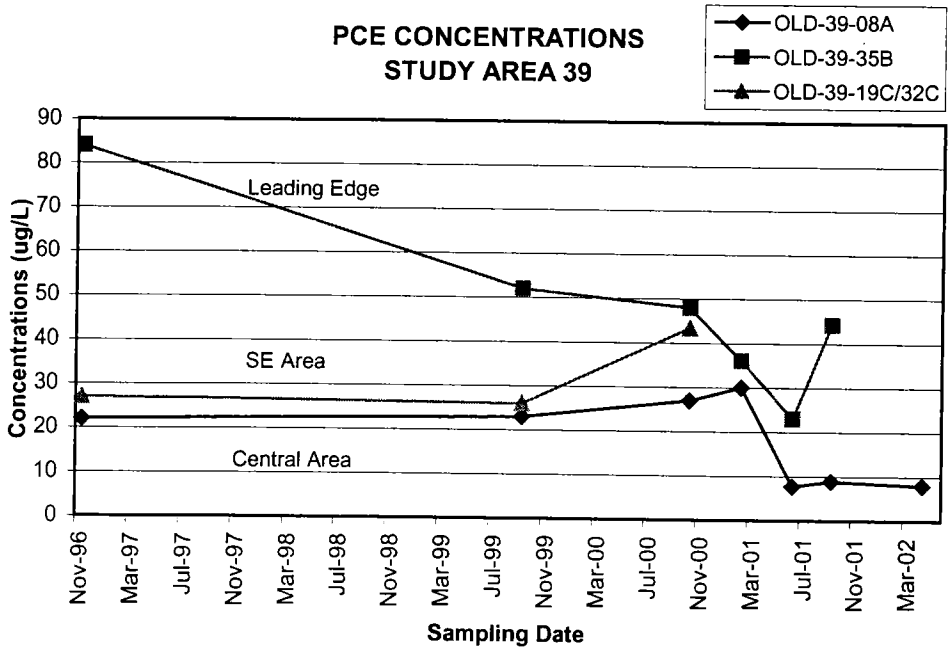
- Jan 1996 – Sep 1997: Field investigations for site screening (Phases I/II) (ABB-ES).
- April 1999: Site Screening investigation report issued (ABB-ES).
- Jul-Oct 1999: Field program (TtNUS) to evaluate chlorinated hydrocarbons in groundwater, further delineate PCE plume, install additional monitoring wells, and evaluate NA parameters.
- August 2000: Site Investigation Report issued (TtNUS).
- August 2001: Soil removal by Developer (soil transported to OU 2 and used as cover).
- February 2002: Draft decision document issued (TtNUS).

Vegetable Oil Injection Treatability Study:

- October 2000: Work Plan approved for IRA implementation (ground water remediation by injection of vegetable oil) (CCI)
- December 2000: Injection of 960 gallons of veggie oil in site wells.
- November 2001: Injection of additional 960 gallons of veggie oil in site wells.
- December 2001: All wells abandoned due to Developer activities at Baldwin Park.
- April/May 2002: Wells reinstalled, groundwater monitoring continues.

Groundwater Monitoring (Sampling):

- Vegetable Oil Treatability Study: 2000 (Oct - baseline sampling); 2001 (Feb); 2002 (May)
- Monitoring wells at the site were abandoned in December 2001 as part of site development activities at the Main Base. The wells were reinstalled at the site in April and May 2002, efficiency monitoring continued at the site in May 2002. ***A report summarizing the results of the monitoring activities was submitted to the OPT in October 2002.***



AREA C

OU 4: A quarterly report summarizing the October 2000 sampling event was submitted to the OPT in February 2001. A round of quarterly sampling was completed in March 2001, and a report documenting the results of the March sampling was submitted to the OPT in June 2001. A second round of quarterly sampling was completed in April 2001, and a report documenting the results of the April sampling was submitted to the OPT in July 2001. The third round of quarterly sampling was completed in July 2001, and a report documenting the results of the July sampling was submitted to the OPT in October 2001. The fourth round of quarterly sampling was completed in October 2001, and a report documenting the results of the sampling was submitted to the OPT in January 2002.

Harding issued the final FS on 02/08/01. The Potassium Permanganate Pilot Study report was finalized and shipped on 03/01/01. The final Conceptual Design for the full scale $KMnO_4$ cleanup alternative was shipped on 3/30/01. On May 4, FDEP approved the OU 4 RI/FS, the KMnO4 Pilot Study report, and the KMnO4 Full Scale Conceptual Design and Performance Specification. The Navy issued a task order for the OU 4 final Proposed Plan, ROD, and Remedial Design in May 2001.

Construction for the upgrade of the groundwater treatment system at the site was completed in December 2000, and the system began operating in January 2001. The treatment system upgrade utilizes the existing UVB wells as recovery wells, and groundwater is treated with a shallow tray air stripper. Treated effluent is discharged to the City of Orlando sanitary sewer system. The Construction Documentation Report for the upgrade was submitted to the OPT in March 2001.

The final Proposed Plan was issued in September 2001. A DPT campaign to further delineate the VOC source area was performed the week of 9/17/01. ***TtNUS issued the draft ROD in December 2001. The final Remedial Design Report (90% design) was issued in February 2002.***

Site clearing activities for the phytoremediation component of the remedial action were completed in February 2002. Planting for the phytoremediation component of the remedial action was completed in April 2002. Approximately 4,600 poplar and willow trees were planted at the site as part of the phytoremediation activities. Construction on the chemical oxidation system to treat the source area at the site will begin in May 2002. ***The system should be completed by the end of February 2003. An EBST/FOST for the clean (southern) portion of Area C is currently in preparation.***

HERNDON ANNEX

Study Area 2

Contaminant of concern: Benzene in groundwater

Significant Events:

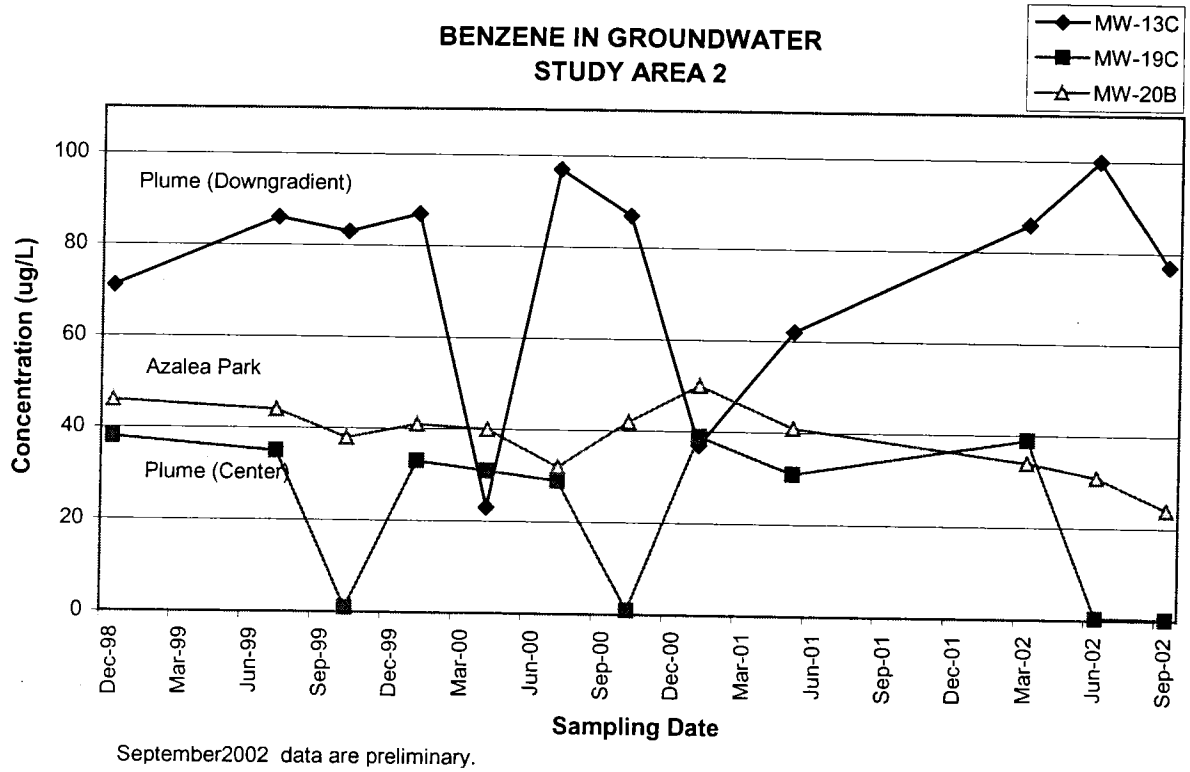
- July 1994 – December 1998: Site Screening Investigation.
- June 1999: BCT signed the final site screening report. Recommendations included focussed risk assessment, groundwater use advisory, sampling of yard wells in Azalea neighborhood, and quarterly groundwater monitoring.
- November 1999: Completion of final FFS and NA Workplan.
- April 2000: Final Decision Document issued.
- August 2000: FDEP issued approval letter for the final Decision Document.

ORC Treatability Study:

- July 2000: FDEP approved the selected remedy, injection of Oxygen Release Compound® (ORC) into groundwater (issued July 19, 2000).
- December 2000/January 2001: ORC injection (four injection points completed on March 26).
- Treatability Study sampling: April/May 2001, July 2001, March 2002 (final)
- July 2002: TS Tech Memo issued (ORC unsuccessful in decreasing benzene concentration)

Groundwater Monitoring (Sampling):

- 1999 (Jul, Oct); 2000 (Jan, Apr, Jul, Oct); 2001 (Jan, Apr, Jul): 2002 (Mar, Jun, Sep). ***The data report for the June 2002 sampling was issued 9/13/02.***



September2002 data are preliminary.

McCOY ANNEX

OU 2: The draft final RI report, incorporating comments and the 1999 re-sampling data, was issued 3/10/00. Comments from FDEP were transmitted on 4/24/00 and 9/8/00, and comments from EPA were transmitted on 9/15/00 and 10/30/00. A teleconference to discuss the Eco RA section was held on 11/01/00 with TtNUS, EPA, and FDEP participating. Comment responses will be issued in November 2000 and the final RI report is scheduled to be completed in late January 2001. A DPT campaign to locate the source of PCE/TCE in the landfill was performed the week of 9/18/00. TCE, benzene and vinyl chloride were detected above GCTLs. The final RI report was issued 3/07/01. Responses to risk assessment comments from the University of Florida were issued on 05/06/02. Revision pages will be issued after FDEP approval of the responses.

Natural attenuation sampling including DPTs and well installation was begun by TtNUS in February 2001. Additional DPTs south of the landfill were completed in April 2001 and the results will be presented at the June OPT meeting. The two drive point wells scheduled for installation along the north-south canal to complete the NA evaluation were delayed by equipment problems and were installed the week of June 4, 2001. A map showing the Groundwater Restriction Area was finalized in July 2001. The draft FS was issued 8/17/01. The draft Proposed Plan was issued for review in December 2001. The draft ROD was issued 02/22/02. The final Monitoring Plan was issued on 02/08/02. The first round of quarterly sampling was performed in March 2002 and the sampling report was issued on 06/14/02. ***The data report for the June 2002 sampling event was issued on 09/13/02. The last round of sampling was conducted in September 2002.***

A draft final EBST/FOST for three small parcels adjacent to OU 2 was issued 09/24/02.

SA 16: Harding collected 13 surface soil and 5 sediment samples from the ditches surrounding SA 16 on 8/17/99. These results were summarized in a letter distributed at the November OPT meeting. Harding issued a letter on 1/26/00 recommending excavation of 4 surface soil samples and one sediment sample. Soil removal performed by EEG (formerly DET) the week of 3/13/00. Draft Source Removal Report (SRR) submitted to Navy on 9/21/00. Draft SRR approved by Navy 9/22/00. Final SRR submitted to the FDEP on 9/28/00. Confirmatory sampling indicates that PAH concentrations still exceed SCTLs in the ditches to the south and east of the site. The delineation of the PAH contamination will be discussed at the July 2001 OPT meeting. TtNUS personnel met with FDEP on 7/26/01 to discuss sampling options. Based on this meeting and subsequent discussions with the Navy, soil samples will be collected from the drainage ditches south and east of the site. Industrial GCTLs will be the groundwater cleanup criteria used to delineate the soil. TtNUS collected soil samples from the ditch south of Binnacle Way on 9/26/01. The laboratory analysis has been completed and the results will be presented at the December OPT meeting. PAH contaminated sediments in the ditch were excavated and disposed of offsite in April 2002.

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SA 17: The final site screening report was issued 3/4/99, and was signed off by the BCT on 4/22/99. The DET completed soil removal activities 5/29/99. CH2M HILL performed additional site investigation activities to further delineate the chlorinated solvent plume (primarily TCE, VC and cis-DCE) and evaluate remedial options. Confirmatory site characterization activities were completed in 4/00. Activities included: 1) sampling of existing site monitoring wells for VOCs, select metals exceeding screening criteria, and natural attenuation parameters; 2) direct push sampling and monitoring well installation to further define the extent of dissolved VOCs; and 3) media sampling for use in bench scale testing by in-situ oxidation vendors. A data report memorandum describing the results of the confirmatory sampling activities was completed in 5/00.

CH2M HILL submitted a work plan to the OPT on 9/26/00 to implement an in-situ chemical oxidation IRA at the site using Fenton Reagent. Injection point installation activities were completed in October 2000. The first phase of reagent injection began in November 2000, and was completed in January 2001. Post injection sampling events were completed in February 2001. Based on the results of the first phase of injection activities, a second phase of injection is warranted. Mobilization for the second phase of injection activities will be completed in May 2001, and 10 additional injectors were installed at the site. Additional mass delineation characterization was completed in July 2001, and the next round of field work at the site began on February 11, 2002. Twenty-six additional deep injectors were installed at the site during February, and additional Fenton's reagent injection was completed during March 2002. The first round of post-injection sampling completed in March 2002 indicated excellent treatment of contaminant mass at the site. A second round of post-injection groundwater sampling was completed in July 2002; the results indicated that contaminant rebound has occurred. Consequently, five additional injector were installed and additional Fenton's Reagent was injected at the site in August 2002. ***Additional injection was completed in September 2002, and post injection sampling was completed in October 2002.***

A draft work plan to delineate the downgradient groundwater contamination was issued to the OPT on May 31, 2002. The downgradient groundwater contamination was delineated with DPT in August 2002. Monitoring wells were also installed and will be sampled in September 2002.

SA 18: The DET completed soil removal activities 5/29/99. TtNUS measured water elevations and resampled monitoring wells 5/99. Chlorinated solvent concentrations in groundwater are all below GCTLs. Harding finalized the site screening report and submitted the report to the OPT in redline/strikeout on 8/26/99. Recommendations include no further action, including a restriction to nonresidential use and a groundwater use advisory due to exceedances of secondary standards for

aluminum and iron. The report will be issued following resolution of secondary standards issues, which are being evaluated by FDEP and Tier II. TtNUS resampled groundwater on 10/25/00 and the results were issued to the OPT on 01/22/01. Two "background" wells were installed and sampled for TAL metals the week of 4/23/01. However turbidity in the samples was high and the wells were redeveloped and sampled in June 2001. The groundwater and soil sampling results were presented at the September 2001 OPT meeting. The draft final Site Screening Report was issued in November 2001. Contaminated soil exceeding residential SCTLs was excavated from the site in April 2002. A draft Decision Document was issued in April 2002. A draft FOST/EBST is in preparation. ***A draft Technical Memorandum documenting the soil removal was issued 10/27/02.***