Minutes

U.S. Army Dugway Proving Ground
Restoration Advisory Board Meeting
Tooele County Courthouse – South Auditorium
47 South Main Street, Tooele, UT
Monday, May 7, 2007
3:00 – 5:00 p.m.

Attendees: Jeff Carter, DPG; John Dalton, EPA; Keller Davis, Shaw E & I; Dave Fendt, Stansbury Park; Jeff Fitzmayer, Parsons; April L. Fontaine, USACE; Joe Gearo, DPG; R.H. Goldborgen, FNA News; Margaret Howard, Plexus Scientific Corp.; Ken Kohnker, Draper; Dave Larsen, DSHW; Royce Larsen, DPG; Chuck Lawrence, Clean Harbors Environmental; Paula Nicholson, DPG; Ken Ogden; Scott Reed, DPG EP; Marianne Rutishauser, Tooele Co; Paige Walton, AQS. Recorder: Carol Shelline, Shaw E & I.

Welcome – Introductions: Joe Gearo welcomed members and guests to the meeting and stated that the purpose of the RAB meeting was to provide all interested parties an update on the restoration program at Dugway. Everyone introduced themselves.

Community Relations Plan: Introducing Margaret Howard from Plexus Scientific Corporation, Scott Reed noted that it was the responsibility of the RAB to maintain a community relations plan to ensure the public was kept informed of all the restoration activity at Dugway. Plexus Scientific is a contractor for the Army Environmental Command (AEC) and has been given the task of updating the DPG Community Relations Plan. Ms. Howard invited the RAB members to share their ideas and thoughts with her while she is in Utah. She is looking for the type of information provided to the public and also, what the public knows and what would they like to know about the restoration activities at Dugway. Ms. Howard is currently reviewing the existing plan and then will make recommendations for updating it. Ms. Howard's phone number is 410-715-3865, ext. 102 and her email address is *mhoward@plexsci.com*. Ms. Howard was available during and after the RAB meeting to field input from the attendees.

Installation Restoration Program – Current Status:

Action since the last RAB meeting (November 13, 2006) on groundwater monitoring and remediation activities was presented by Keller Davis, Shaw Program Manager.

Groundwater Monitoring (Shaw Environmental, Inc.)

Post Closure Monitoring: There are two components of ongoing groundwater monitoring—(1) sites closed with waste-in-place (e.g. landfills) with specific groundwater monitoring and reporting requirements contained in Dugway's RCRA Part B permit (Module VII); and, (2) management of historical releases through the regionalized Groundwater Management Areas (GMA).

The RCRA Part B permit is authored and maintained by the State UDEQ. Requirements for 2006 include sampling at HWMUs 2, 43, and 128.

(1) HWMU 2 is west of Granite Mountain and approximately 50 – 60 miles from English Village. As previously reported, this landfill cover was constructed in 2003 with the first sampling done in 2004 and the second in November 2006. Post closure groundwater sampling is performed biennially.

a. The results of the analysis completed in November 2006 were:
    i. metals—arsenic levels increasing in MW02 and MW04;
    ii. sulfate—decreasing trend; and,
    iii. TOX (total organic halides) were within historic range.
b. Recommendation: Since there was no evidence of significant changes in the groundwater conditions, future sampling requirements will be deferred to the Downrange GMA plan.

(2) HWMU 43 is the 70-acre site in English Village where a landfill cover was constructed in 2004. This site is also monitored biennially. The first sampling was completed in December 2006. Prefacing the outcome of the sampling, Mr. Davis explained the primary components of total arsenic in the environment are Arsenite (III) and Arsenate (V). Sources of both Arsenite (III) and Arsenate (V) include soil weathering, coal burning, ore smelting, and pesticide application. Arsenite (III) is more mobile and therefore more toxic than Arsenate (V).

a. The results of the testing:
    i. arsenic speciation—only 1% of total arsenic was Arsenite (III);
    ii. volatile organic compounds (VOCs)—of the seven (7) wells sampled, 67 compounds were analyzed for in each well. Trichlorofluoromethan or Freon 11 was detected in MW02 at 0.27 μg/L. Residential remediation goal is 1,300 μg/L.
    iii. Both metals and nitrate were detected in concentrations similar to historic levels.
    iv. TOC (total organic carbon) and TOX (total organic halides) were within an acceptable range.
b. Recommendation: Since there was no evidence of significant changes in groundwater conditions, defer future sampling requirements to English Village GMA plan.

(3) HWMU 128. Waste removal and risk-based closure was done in 2004 on this former pesticide mixing and storage facility. One round of groundwater sampling was required to validate 1995 results and was done in November 2006. The site was analyzed for VOCs (volatile organic compounds), SVOCs (semi volatile organic compounds), PAHs (polynuclear aromatic hydrocarbons), pesticides, herbicides and metals.

a. The result of the testing:
    i. No VOCs, SVOCs, PAHs, or pesticides were detected.
    ii. The herbicide Dicamba was detected in MW01 at 0.66 μg/L. The residential remediation goal is 1,100 μg/L.
    iii. No metals detections that exceeded the Utah Maximum Concentration Limits (MCLs).
b. Recommendations: Since the results generally agree with the 1995 results, no future groundwater sampling is proposed. Nitrate sampling will be performed per the English Village GMA.

Ditto and Carr Groundwater Management Areas (GMA):

Mr. Davis explained that the objectives of the two GMAs were:

(1) Regionalize groundwater management to focus resources on known plumes.
(2) Monitor known plumes as indicators of environmental impacts.
(3) Standardize the approach to plume monitoring, resource management, and clean-up objectives.

In order to address these objectives, high frequency water levels testing, as prescribed in the GMA Plans, is required. It includes collecting water levels in Ditto at five (5) wells spread across three (3) sites every 15 minutes for one year. The monitoring illustrates seasonal changes in the groundwater mound in Ditto and allows a better understanding of communication between shallow and deep groundwater. Pictures and graphs were distributed illustrating the results of high frequency water level testing.

Remediation Activities (Shaw Environmental, Inc.)

Mr. Davis explained there were two types of remediation technologies:

(1) Closure-in-place landfills which are used when safety issues preclude handling the wastes. In this instance, a geo-membrane supported geosynthetic clay liner (GCL) system is installed and routine maintenance performed.
(2) Removal actions are performed when the site history and investigation results support waste removal to attain closure. Sampling is used to determine that waste and exposure risks have been removed.

Landfill Cover Construction: Four (4) sites scheduled for landfill cover construction in 2007. They include DPG-039, -055, -079, and -197. Work began on April 16th and is expected to be completed in July 2007. There will be approximately four (4) acres of GCL deployed over the four (4) sites.

Removal Actions: The following 11 sites are scheduled for removal action in 2007: DPG-009, -018, -019, -023, -025, -115, -118, -180, -188, -199, and -212. The site features were defined during the investigative phase and the safety assessment determined that the waste is safe to excavate and remove. Waste samples are used to determine disposal options. The work is scheduled to begin in June 2007 and will proceed as follows:

(1) waste will be excavated and disposed of;
(2) confirmation sampling in the footprint of excavation will be done; and,
(3) sample results will be used to demonstrate adequate removal. Projected completion date is November 2007.

Resource Conservation and Recovery Act (RCRA) Facility Investigation Sites (Parsons)

Jeff Fitzmayer, Project Geologist, provided a brief explanation of the RCRA correction action process, specifically defining solid waste management units (SWMU) as *"Any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released."* There are four main steps to the correction process:

(1) RCRA Facility Assessment (RFA);

(2) RCRA Facility Investigation (RFI) – Phase I;
(3) RCRA Facility Investigation (RFI) – Phase II; and,
(4) Corrective Measures Study (CMS).

Parsons is currently in the RCRA Facility Investigation (RFI) – Phase II portion.

Status of RFI SWMUs, Priority I (considered high risk to the environment): 32 SWMUs in this category in the following phases:

21 SWMUs have the RFI Final Reports approved by DSHW. They are sites 3, 16, 17, 18, 21, 44, 52, 54, 65, 79, 98, 172, 194 (A,B,C), 199, 200, 207, 212, 213, and 215.
2 SWMUs have Final RFI Reports in preparation. They are 41 and 180.
1 SWMU (site 60) has the RFI Report in draft stage.
8 SWMUs have upcoming removal actions or further investigation needed. They are 4, 15, 32, 35, 173, 177, 192, and 208.

Status of RFI SWMUs, Priority II (lower risk than Priority I): 39 Priority II SWMUs in this category in the following phases:

28 SWMUs have the RFI Final Reports approved by DSHW. They are 6, 8, 10, 19, 23, 25, 56, 56B, 75, 77, 113, 115, 116, 118, 150, 154, 171, 179, 185, 188, 189, 193, 197, 205, 206, 211, 214, and 216.
6 SWMUs have the RFI Final Reports in Preparation. They are 61, 97, 133, 150, 183, and 201.
1 SWMU (site 11) has the RFI Report in Draft Stage.
4 SWMUs have upcoming removal actions or further investigation needed. They are 31, 114, 209, and 210.

Work Completed Since November 2006: Since the last RAB meeting, Parsons has completed the following reports:

Response to UDEQ comments on Draft Final Carr GMA (alternate groundwater monitoring plan)
Submitted Draft-Final Downrange GMA
Submitted Final RFI Reports for SWMUs 8, 150, and 154
Submitted Draft-Final RFI Reports for SWMUs 201 and 183
Submitted Draft RFI Reports for SWMUs 11 and 183

The following Work Plans or Work Plan Variances (WPVs) were also completed:

Submitted (and approved) Final Work Plan for SWMUs 173 and 189
Submitted (and approved) Final Work Plan for investigating biological waste sites
Submitted (and approved) Final WPVs for SWMUs 180 (groundwater), 192 and 208

Future Report Activity: 2007 report preparation include the sites listed below:

Final RFI Reports for SWMUs 61, 97, 133, and 183
Draft-Final RFI Reports for SWMUs 11, 41, and 201. (Note: SWMUs 11 and 41 are radiological sites)
Draft RFI Report for SWMU 60
Final Carr and Downrange GMAs
Draft English Village GMA

Current Field Work:

RFI field work includes soil sampling at SWMUs 4, 60, 114, 192, 209 and 210 and groundwater investigation at SWMU 180.

Removal actions will be done during the Summer of 2007 at SWMUs 35, 173, 189, and 208

Update on Downrange Groundwater Management Area (GMA): Mr. Fitzmayer explained that the Downrange GMA was an alternative groundwater monitoring program, adding that it meets the requirements of regulation UAC R315-7-13. In part, it is based on the current and future "use and value" of the groundwater with the purpose of protecting human health and the environment. This program, with its emphasis on hydrology and site conditions, is more applicable to the unique conditions at Dugway than other programs. This program is divided into four (4) regional GMAs: Ditto, Carr, Downrange, and English Village. Each plan is a stand-alone and is uniquely tailored to the hydrogeology and contaminant conditions at each GMA. Each is developed with input from the Army and UDEQ, with final approval by UDEQ. Once finalized, each plan is incorporated into the DPG Part B Permit. The program allows for the addition of new sites. Mr. Fitzmayer outlined the advantages of the GMA Program:

(1) fewer wells/samples,
(2) limited analyte list,
(3) well-defined exit or ramp-down strategy, and
(4) lower costs.

In conclusion, the groundwater monitoring plan for the Downrange GMA will proceed as follows:

(1) Shallow source area monitoring (the place from where the plume is emanating) which involves identifying trends in source concentrations and using the trend information to develop future monitoring strategy or to remove monitoring program.

(2) Deep source area monitoring (where applicable) to detect migration of plume to deeper depths.

(3) Downgradient monitoring to determine the horizontal spread of plume.

RAB Business

Marianne Rutishauser asked how much longer the RAB would be going. Scott Reed responded that it would go as long as we were receiving financial support. He estimated that the RAB would mostly likely be needed for the next two (2) years.

Membership and Roles: Ms. Rutishauser requested an updated membership list. Mr. Gearo will see that an updated list is issued.

Repository Updates: Ms. April Fontaine (USACE) will investigate the available options for discussion at the next RAB meeting.

Community Relations Interviews (conducted by AEC): See "Community Relations Plan" on Page 1

Old Business –Dave Fendt made a motion to approve the minutes from the November 13, 2006 meeting and Marianne Rutishauser seconded the motion. The motion was unanimously approved.

New Business – Reminder for those interested in providing input to the Community Relations Plan to see or contact Ms. Howard.

Questions and Discussion – Royce Larsen asked "When starting, how often is groundwater measuring done?" Mr. Davis responded that for the first five (5) years it is very intensive, generally driven by the work prescribed. After the (5) years, the actual testing becomes less intensive as the information gleaned is used to tailor future requirements.

Mr. R.H. Goldborgen inquired "how long each land fill was used?" Mr. Davis responded they were used during the 1940s – 1980s timeframe. Mr. Goldborgen then asked if there was a "protocol for evaluating these sites that would go back to the 1940's and 1950's?" Mr. Davis said there was extensive interviewing and research done to evaluate the sites. Groundwater and soil testing was done to identify presence or releases of any agents and their breakdown products as well as any radiation level.

Referring to the high frequency water level data collection, John Dalton asked about the corrections for instrument drift. Mr. Davis responded that the instrumentation was simply recalibrated.

Ken Ogden asked about plume penetration depths and length of time DPG would continue drilling efforts. Also wanted to know the time span for plume growth. Mr. Davis and Mr. Fitzmayer responded that plume vertical migration was hindered by the clays in the local geology. Releases have occurred during the last 60 years and are well defined laterally and vertically.

Scott Reed noted that the key objective of groundwater management approach as defined in the GMA is the standardization of protocols and improved efficiency. Dave Larsen said that from the State's point of view it is the mitigation of risk and improved safety.

Royce Larsen asked about the drinking water upgrade in English Village. Mr. Reed said the drinking water program was not part of the Installation Restoration Program, but did provide the group with an explanation that the upgrades were in responses to new, more stringent drinking water standards promulgated by EPA. The upgrades were only made to the English Village water supply. The Ditto supply meets the new standards.

Next Meeting – The next RAB meeting will be Monday, August 13, 2007, 3:00 – 5:00 p.m. at Dugway Proving Ground. Please submit agenda topics to Keller Davis no later than Wednesday, August 1, 2007.

An agenda item for the next meeting will be the available options for repository updates.

The meeting adjourned at 5:01 p.m.

Attachments: Shaw E & I, Inc. presentation slides
Parsons RFI and Carr GMA presentation slides
Attendees Roster