JH BAXTER
INTERIM REMEDIAL ACTION MEASURE
SITE MEMORANDUM

Site Name: J.H. Baxter

ECSI # 55

Site Location 85 Baxter Street
Eugene, Oregon

Prepared by: _____
Geoff Brown
Western Region Project Manager

Approved by: _____
Max Rosenberg, R.G.
WR Cleanup Manager

Date: October 1, 2007

Introduction

J.H. Baxter (Baxter) has submitted a proposal to place a soil cap over the east 11 acres of the Baxter wood treatment facility in Eugene, Oregon. The purpose of the soil cap is to limit worker exposure to arsenic contaminated soils and to eliminate the potential for generating wind-blown arsenic-laden dust. This action is considered a removal action under OAR 340-122-0070.

The J.H Baxter (Baxter) site consists of approximately 42 acres of industrial property. The site has been used for wood treatment since the early 1940s, employing a variety of processes. Historical spills and material handling practices have resulted in soil and groundwater contamination by chemicals including pentachlorophenol, creosote-related chemicals, arsenic, and other metals.

The proposed remedial action measure applies only to the eastern 11 acres of the site. Contamination in this area of the site is limited to arsenic in shallow soils. The groundwater plume at the site, which is comprised mainly of pentachlorophenol with no arsenic component, originates beneath the central and western portions of the site. The 11-acre eastern portion does not contribute to groundwater contamination at the site.

Soil on the eastern 11 acres of the site contains arsenic at concentrations ranging from 15.2 mg/kg to 123 mg/kg, above risk-based concentrations (RBC)s for direct contact by industrial workers and construction workers, which are 1.7 parts per million (ppm) and 13 ppm, respectively. RBCs are values above which a chemical poses an unacceptable risk. DEQ compares site related chemicals to RBCs to determine to determine if remedial action may be necessary. If a chemical exceeds an RBC, remedial action may be needed. Arsenic contamination in shallow soils on the East Storage Yard does not constitute a hot spot because arsenic is present at concentrations below 100 times the applicable risk based concentration for the site.

Arsenic contamination in the Eastern Storage Yard is confined to the shallowest soils, with no elevated levels of arsenic detected at depths greater than three feet below ground surface.

No pentachlorophenol was detected in any soil sample from the Eastern Storage Yard. Polynuclear Aromatic Hydrocarbons (PAH)s, which are creosote related chemicals, and other metals are present in Eastern Storage Yard soils at concentrations below the most stringent applicable RBCs.

Potential Remedial Alternatives

Baxter proposed soil capping as an interim remedial action for the Eastern Storage Yard as a method for eliminating occupational exposure to arsenic contaminated soil and eliminating the potential for the generation of wind blown dust from the area. Since the cap proposed by Baxter had the potential to stand as the permanent remedy for this portion of the site, DEQ conducted its evaluation of the remedy as part of a range of remedial alternatives including no action, soil excavation/removal, soil capping, and asphalt capping.

In order to determine whether capping was the appropriate alternative for the Eastern Storage Yard, DEQ considered capping and the other four alternatives using five balancing factors, which include the following: effectiveness, long term reliability, implementability, risk of implementation, and cost. The table presented on the next page presents DEQs evaluation of the alternatives.

As Table 1 illustrates, Soil Capping with institutional controls is as effective as asphalt capping or excavation. Soil Capping has good long term reliability if the cap is regularly inspected and maintained, although not as good as removal. All thee alternatives are implementable. However, implementation risk, primarily driven by the generation of dust during excavation activities, for excavation is higher than the other alternatives. Soil Capping is less than half the cost of asphalt capping and less than 1/3 the cost of excavation.

DEQ has determined the benefit in long term reliability of excavation over soil capping is outweighed by risk of implementation and expense of excavation, given that all

alternatives are equally protective. Therefore DEQ recommends soil capping with institutional controls as the preferred cleanup alternative for the site.

Soil Capping

The remedy proposed by Baxter consists of placing a geotextile fabric over the east 11 acres of the site and then placing two layers of fill over that, a 6-inch layer of compacted soil overlain by a 6-inch layer of compacted crushed rock. Upon completion of the cap, a fence will be placed around the capped area to ensure that inventory storage or site operations no longer occur in the East Storage Yard.

The long term effectiveness of this remedy hinges on two key factors, whether or not the cap is maintained, and whether or not treated timbers or poles are stored on the capped area in the future. Therefore, a key element of this remedy will be a deed restriction requiring regular inspection and maintenance of the cap and requiring that this portion of the site no longer be used for site operations or material storage.

Taking into account any formal comments received during the public comment period, DEQ will prepare an Easement and Equitable Servitude (EE&S), which will include the following general considerations:

1. The cap will be regularly inspected and maintained under a site management plan (to be developed by Baxter) forever.
2. No site operations aside from vehicular parking will be allowed on the capped portion of the site without DEQ authorization.
3. A health and safety plan, part of the site management plan, will be followed whenever Baxter or future property owners breach the cap for utility work or construction.
4. DEQ will be notified of work that could breach the cap.
5. Other standard considerations such as notification of property sale, notice of zone change, DEQ access to the property, etc, will be included in the EE&S.

Conclusions and Recommendations

The proposed soil cap is protective of human health and meets the general requirements for a removal action as defined in OAR 340-122-0070. In addition, the proposed cap was evaluated under the general requirements for remedy selection for a feasibility study. DEQ approves implementing the proposed action.

Public Comment

Public comment was received during the public comment period. The public comments that were received fell into two general categories, sustentative issues that are already addressed by DEQ's evaluation process, and concerns that are outside the authority of Oregon's cleanup rules. Copies of DEQs response to public comment is attached to this document.

Table 1 – Evaluation of Remedial Alternatives

Alternative	Effectiveness	Long-Term Reliability	Implementability	Implementation Risk	Reasonableness of Cost
No Action	Not effective	Not reliable	Implementable	NA	NA
Removal	Very effective, removes all shallow soils posing an unacceptable risk to on-site workers and which could produce fugitive dust	Very reliable as all shallow impacted soil is gone.	The site is open, flat, and unpaved, with good access. Impacted soils are shallow. This alternative is implementable.	Dust generation during excavation activities would have to be controlled. Cleanup worker exposure to impacted soils would need to be controlled by using personal protective equipment and properly trained personnel.	Removing the risk by excavating surface soils would require excavation of 10.7 acres of site to a depth of approximately 1 foot for a total of approximately 17,000 cubic yards of contaminated soil. Disposal of these soils and subsequent fill activities would cost approximately 2.9 million dollars.
Asphalt Capping	Very effective. Eliminates surface exposure and the potential for wind blown dust. This remedy would not be effective at limiting exposure by future construction or excavation workers to contaminated soils, which would need to be controlled using safe work practices under a soil management plan.	Reliable, however it requires regular inspection and maintenance. A deed restriction requiring regular inspection and maintenance would be required, as would a soil management plan.	There are no barriers to implementation of site paving.	Risks of implementation include minor dust generation during construction and direct contact for the construction workers.	Cost for grading, sub-base fill, and grading for a 10.7-acre site are approximately 1.7 million dollars.
Soil Capping	As effective as asphalt capping at limiting exposure to on site workers and wind-blown dust, with the same limitations and conditions	A soil cap is reliable in the long term, as long as it is not breached. Soil capping requires regular maintenance under a deed restriction.	There are no barriers to implementation of site paving.	Risks of implementation include dust generation during construction and direct contact for the construction workers.	The cost of implementing a soil capping approach utilizing a geotextile membrane and 12 inches of fill is approximately $800,000.

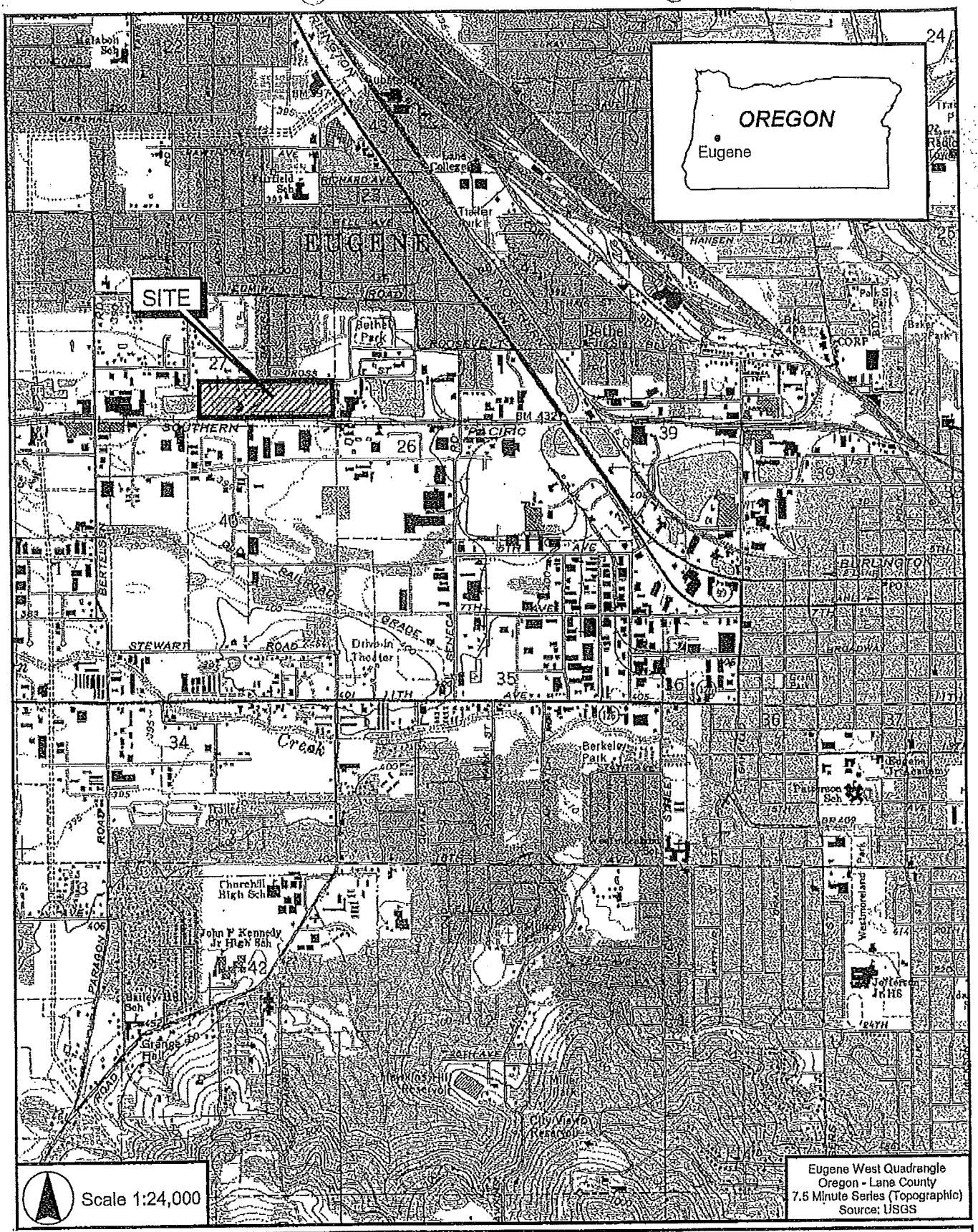

Figure 1. Site Vicinity Map - J.H. Baxter - Eugene, Oregon

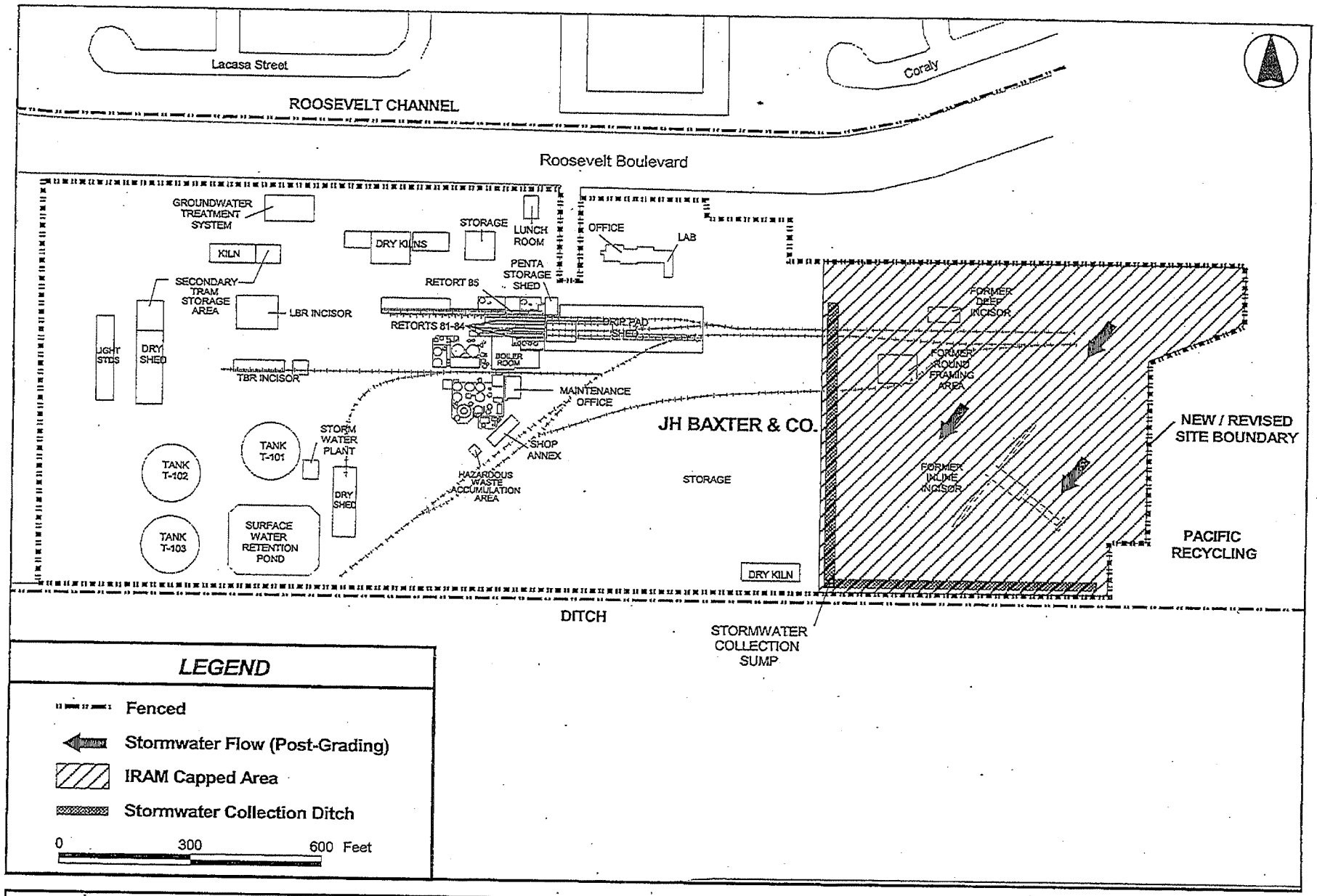

Figure 2. Facility Detail Map - JH Baxter - Eugene, Oregon