RDMS DocID 109887

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: **BASF EASTPORT FACILITY**
Facility Address: **30 STANIELS ROAD, EASTPORT, MAINE 04631**
Facility EPA ID #: **MED 001 099 308**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

__X___ If yes - check here and continue with #2 below.

_____ If no - re-evaluate existing data, or

_____ if data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated

Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

__X__ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

_____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):_____

SUMMARY

This property has been the site of a manufacturing facility at least as far back as the late 1940s. Over that period of time activities have included the production of fish meal, production of protein based fire retardant foam and production of pearl essence. This facility was owned and operated for many years by the Mearl Corporation until about 1995 when it was acquired by Englehard Corporation. Subsequent to the acquisition the facility operated as Mearl LLC. Englehard was acquired by BASF Corporation in 2006. Pearl essence has been the sole product manufactured at this facility in recent years and production of this product ceased in 2007. The facility is now owned by the BASF subsidiary BASF Catalysts LLC, with the exception of the area identified on the attached Figure 1 as Parcel 3b which was recently transferred to the Eastport Port Authority. The implications of this transfer will be discussed in more detail in the groundwater discussion section.

The production of pearl essence (1950's through 1995) involved extraction and refining of guanine, a purine base present in herring scales, using significant quantities of chemical solvents such as naphtha and ethylene dichloride (1,2 Dichloroethane). These solvents were reported to have been used in volumes of thousands of gallons a year and staged on Site in above-ground tanks. Others solvents such as isopropanol and butyl-acetate were used in lower volume. Subsequent site investigations have identified additional VOCs including some additional chlorinated compounds that could be attributed to use in general plant maintenance or as possible contaminants of the documented extraction solvents. These VOCs were generally found at relatively low levels and/or very localized. In 1995, the extraction process was switched to an aqueous

based extraction which significantly reduced volatile organic compound storage and usage (to approximately 2,200 gallons of naphtha per year) at the Site.

GROUNDWATER

The evidence from extensive geological investigation including numerous borings and seismic studies are showing this site as three quite different geological units.

1. Southwest Peninsular Area: As seen on the attached Figure 1, a large part of this site consists of a peninsula. The majority of the industrial activities took place on that peninsula. Parts of the peninsula are natural formations and parts are built up of earthen materials bound by wooden cribwork and concrete retaining walls. The natural formations in particular often have very shallow overburden and in a number of locations, exposed bedrock. With few exceptions, the overburden depth ranges from 0 to 6 feet. While contaminated groundwater was found in some overburden wells, the availability of overburden groundwater was found to be very unreliable. Because of the discontinuous nature of the overburden, no contaminant plume or flow pattern could be discerned. It appears reasonable to assume that all overburden groundwater will have a relatively direct flow path to the Broad Cove. As noted, the overburden water samples did not exceed the most conservative drinking water standards by more than a factor of 10.

Overburden Wells Contaminant (only exceedances shown)	GW Standard (ug/L) MCL/MEG*	Highest Concentration in GW (ug/L)	Location
Ethyl Benzene	700/30	**266**	MW-10
1,2-Dichloroethane	5/4	**8**	MW-2
Arsenic	50/10	**19**	MW-2

*MCL = maximum contaminant level MEG = maximum exposure guideline

Since the above groundwater results were obtained, extensive soil removal was conducted in this area including many areas excavated to bedrock. Primary contaminants driving removal were petroleum constituents, SVOCs, low level PCBs and metals. All excavations were backfilled with clean fill. No additional overburden groundwater assessment is planned as any impact of this removal should be expected to be positive.

Bedrock groundwater has been evaluated at a number of multilevel monitoring well locations on the peninsular and a summary of the 2011 data can be seen on the attached Table 8. These data show some petroleum related VOCs in all peninsular wells, mostly limited to the upper levels and mostly only small exceedances of the MEGs. More significant are a number of chlorinated VOCs scattered about in the various wells, in one case exceeding the standards by several hundred times.

As can be clearly seen on the attached Figure 1 and Figure 4-4, the groundwater leaving

the site from this area can be reasonably assumed to flow only to the waters of the surrounding Broad Cove.

2. Upper Site Area: This area is the East side of the site and can be generally visualized by looking at the surface topo lines on Figure 1 where, as moving east, the surface elevation starts increasing notably from the level of the center of the peninsular. This area represents the least impacted area of the site, with the northeast section being open field with no evidence of past industrial activity and the southeast section (identified also as Parcel 3b on Figure 1) which has records and evidence of some past industrial activities. As seen on the figure, the Upper Site Area is the boundary to all property adjoining this site. Please note that for the sake of further discussion, the southeast section will be referred to only as Parcel 3b. Also note that the boundary of Parcel 3b as depicted on Figures 1 and 4-4 actually extends slightly further eastward. This eastern end of Parcel 3b continues to rise steadily and is heavily wooded with no evidence or record of industrial activity.

The geology of this area is quite varied ranging from bare bedrock in some upper portions of parcel 3b to 15-20 feet or more in the northeast section. Historical industrial activity on Parcel 3b has been investigated and soil remediation was conducted a number of years ago. More recent investigation has identified some residual soil contamination but nothing was found that exceeded cleanup standards for a commercial/industrial site. Overburden groundwater was investigated and no exceedances were found. Although there was no record or evidence of industrial activity in the northeast section, it was likewise investigated. After completing a number of soil samples and exploratory test pits, no issues were identified therefore no overburden groundwater investigation was warranted.

As the groundwater investigation proceeded through a number of phases it became quickly evident that some heavily contaminated bedrock groundwater is present on this site. There are presently a number of bedrock wells that would be considered boundary wells as shown on Figure 4-4. In the Northeast section, MW-20B would be considered a boundary well and has never had an exceedance after a number of sampling rounds. This is not listed on Table 8 because it was not tested in 2011. Parcel 3b has several boundary wells including MW-21B, MW-19B, MW-24B and to a lesser extent, MW-23B. As shown on Table 8, none of these wells show any exceedance from the major contaminants, rather there are only a few very small exceedances for arsenic or lead. This is supported additionally by the interpreted bedrock groundwater contours as shown on Figure 4-4 which suggest that there would be no eastward migration of contaminated groundwater. Additionally, there are three residential bedrock wells at residences east of the site along Staniels Road. These well have been tested numerous times and no contaminants have been found.

Please note however that while most of these wells have had multiple sampling rounds, the data for wells MW-23B and MW-24B have been sampled only once. Therefore any conclusion regarding groundwater migration would be considered only tentative and

conditional until at least three years of additional sampling rounds are conducted.

3. Bedrock Trough Area: This is the third and most unusual and unexpected feature of this site. There was nothing in the surface topography to suggest what bedrock geology might be found below. Dividing the Peninsular area from the Upland Area of the site is a bedrock trough up to 60 feet deep running north to south across the neck of the peninsular roughly along a line between MW-17B and MW-18B (See Figure 4-4). Much of the historic solvent storage and processing took place along the northern end of this area. Soil remediation activities conducted a number of years ago resulted in the removal of most of the contaminated overburden at the site of these activities. Recent investigations identified some additional contaminated overburden which has been removed and backfilled. While no shallow overburden groundwater has been identified as impacted in this area, the bedrock trough well data on Table 8 clearly demonstrate where the most heavily contaminated groundwater is located.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 3

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

__X__ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

The bedrock groundwater gradients shown on Figure 4-4 suggest the plume migration would only be north or south to Broad Cove. In addition to the (site) boundary wells discussed earlier, the data from Wells MW-25B, MW-23B and MW-28B suggest a sharp eastern boundary to the plume. As cautioned earlier, the data from these wells represent only one round of sampling so further sampling will be needed to support such a

conclusion. While overall site geology suggests that the plume may not be moving very rapidly, any migration is certain to be into Broad Cove.

Upon careful examination of the boundaries of Parcel 3 as shown on Figure 1, the Department believes that the Bedrock Trough plume does in fact cross the western tip of that property. As indicated earlier, Parcel 3 was recently transferred to Eastport Port Authority (who is also expected to ultimately own the entire site) but as the existence of this plume was known at the time of the transfer, the transfer included appropriate environmental covenants to prevent contact with or disturbance of the contaminated groundwater. Also included was acknowledgement of BASFs responsibility for addressing the groundwater issues and access agreements BASF and regulatory agencies as necessary to complete these responsibilities. (EC reference attached)

Footnotes:

[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

__X__ If yes - continue after identifying potentially affected surface water bodies.

_____ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

As can be clearly seen on Figure 4-4, Broad Cove is the only surface water body that could receive the contaminated water discharge from this site. As its name suggests, Broad Cove is a large open cove that communicates directly with Cobscook Bay, one of Maine's largest bays, which opens directly into the Bay of Fundy. Broad Cove is a fully marine environment with twice daily tides averaging about 18 feet and ranging from about 14 feet minimum to a maximum of greater than 25 Feet.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

_____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

__X__ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

1. As discussed earlier, this site has several distinct groundwater environments that must be addressed separately. The first being the Peninsular Area where only one well (MW-15B) has contaminants greater than 100 times the MEGs. Three other wells showed lower contaminant levels but still in excess of the MEGs. None of the wells show similar patterns of contaminants, suggesting that there is no single plume large enough to be defined by two or more wells. When looking at the peninsular hydrogeologically, it is a very small island with a series of small contaminant plumes. All groundwater flows out more or less radially from the central high point. This might suggest relatively low

groundwater flow as most recharge must come from precipitation on that very small area, the topography of which would cause much of that water to flow off as surface runoff. Lacking better information however it could be assumed that as any of the contaminated groundwater reaches the surface waters it could be at the maximum contamination level observed. Table 8 shows the maximum levels of each contaminant in the SW Peninsular Area wells. The only contaminant greater than 100 times the standard was vinyl chloride in MW-15B at 200-400 times the MEG. These wells have been monitored for a number of years and there is no indication that contaminant levels are expected to increase. Also as discussed earlier, industrial activity on the site has ceased and extensive soil remediation was completed last year so it is unlikely that any contaminant source area remains on the peninsular.

The other groundwater area that is of concern is the Bedrock Trough Area. As can be seen on Table 8, the major contaminants of concern are C5-C8 Aliphatics (petroleum fractions) at levels up to about 330 times the standard, and 1,2-DCA (chlorinated VOCs) at levels up to about 75,000 times the MEG. These highest concentrations are found in MW-22DOB which is actually an overburden well screened as close as possible to the overburden/bedrock interface at the deepest known part of the bedrock trough. This suggests that the same contaminant plume is present in both bedrock and deep overburden groundwater. As can be noted on figure 4-4, the locations of the MW-22 wells are in the central part of the bedrock trough and this groundwater would not be expected to discharge directly to the surface water. Wells located closer to the shoreline are more likely to be representative of the quality of the groundwater being discharged to the surface waters and these include MW-17B to the south and MW-18B and MW-27B to the north. Of these wells, MW-18B has the highest levels of contaminants at 30 times the standard for C5-C8 Aliphatics and 6000 times the standard for 1,2-DCA. It should be noted that MW-27B has had only one round of sampling to date but the other two wells have been sampled regularly since 2008 with relatively consistent results. There has been nothing seen to suggest the contaminant levels will be increasing significantly in the groundwater being discharged to the cove.

There has been no assessment specific to the groundwater flux rate in the Bedrock Trough Area because of the irregular geology of that area. In lieu of that approach, a site specific baseline ecological risk assessment has been completed and will be discussed in the next section.

Footnotes:

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

__X__ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR
2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

As mentioned in the previous section, a site specific baseline ecological risk assessment has been completed for this site. Most of the fieldwork for this assessment was done in 2010 and included evaluation of sediments, pore water, surface water as well as representative marine organisms and terrestrial organisms that may depend on them.

Quoted from the executive summary of that study:

"Conclusions:

This BERA concludes that adverse effects are not expected for individual organisms, population or communities of algae, benthic invertebrates, fish, birds, or wildlife. Although uncertainty is unavoidable in risk assessments, the various sources of uncertainty are not so great as to challenge this overall finding. Indeed, in virtually all cases, where uncertainty is unavoidable, conservative assumptions are employed to ensure that risks are more likely to be overestimated than underestimated."

The full reference to the source of this quote (BERA) will be listed below.

Footnotes:

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

__**X**__ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s)

Further groundwater investigation will be conducted in addition to continued regular monitoring of existing wells. This is discussed in the 2011 groundwater report referenced below

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

__X___ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the _ BASF EASTPORT FACILITY EPA ID # MED 001 099 308, located at: 30 STANIELS ROAD, EASTPORT, MAINE 04631

_. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

_____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

_____ IN - More information is needed to make a determination.

Completed by (signature) Edward J. Vigneault Date 9/28/12
(print) Edward J. Vigneault
(title) Environmental Specialist

Supervisor (signature) Stacy A. Ladner Date 9/28/12
(print) Stacy A. Ladner
(title) Unit Manager
(State) Maine

Contact telephone and e-mail numbers

(name)__Edward J. Vigneault
(phone #)_207-287-7827
(e-mail)_edward.j.vigneault@maine.gov

Locations where References may be found:

2011 Annual Groundwater and
Porewater Investigation Summary Report
BASF Corporation Facility
30 Staniels Road, Eastport, Maine
Prepared for:
BASF Corporation
100 Campus Drive
Florham Park, NJ 07932
Prepared by:
ENVIRON International Corporation
Groton, Massachusetts
Date: **April 2, 2012**

RCRA Closure Report BASF Facility, Parcels 1, 2, 3A
Eastport, Maine
USEPA Identification Number MED001099308
Prepared for:
BASF Corporation
100 Campus Drive
Florham Park, NJ 07932
Prepared by:
ENVIRON International Corporation
8 Hollis Street
Groton, Massachusetts
Date: **August 16, 2012**

Baseline Ecological Risk Assessment
Revision 1 Volumes I,II and III
BASF Facility
30 Staniels Road, Eastport, Maine
Prepared for:
BASF Corporation
Prepared by:
ENVIRON International Corporation
Portland, Maine
Date: **September, 2012**

"Declaration of Environmental Covenant"
BASF Corporation, 30 Staniels Road, Eastport
Recorded in Book 3764 Pages 177-189, Washington County Registry of Deeds
August 9, 2011.

TABLE 8
GROUNDWATER QUALITY SUMMARY
2011
Permanent Discrete Interval Bedrock and Overburden Groundwater Monitoring Wells

BASF Facility
30 Staniels Road, Eastport, Maine
ENVIRON Project No. 08-25278M

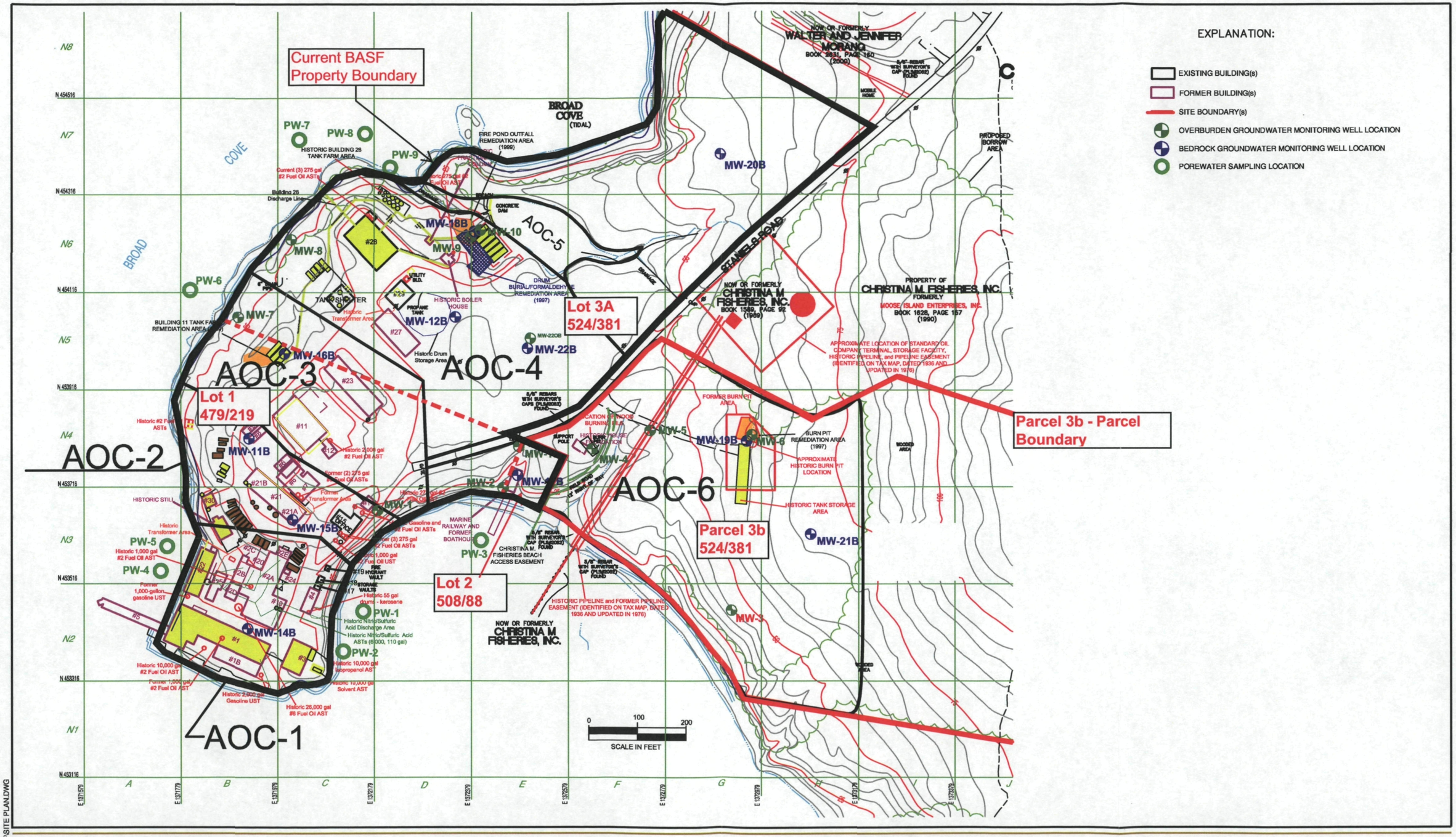
		Discrete Interval Specs			Maximum Concentration of Analytes Exceeding MEGs (ug/L) MEG Shown in (parenthesis)														
		Screen Intervals (feet BGS)			VPH & Petroleum VOCs					CVOCs								Metals	
AOC	Well	Interval Designation	Top Depth	Bottom Depth	C5-C8 Aliphatics (300 ug/l)	C9-C12 Aliphatics (700 ug/l)	C9-C10 Aromatics (200 ug/l)	Ethylbenzene (30 ug/l)	Xylenes (1000 ug/l)	1,2-DCA (4 ug/l)	TCE (30 ug/l)	Carbon Tetrachloride (5 ug/l)	Vinyl Chloride (0.2 ug/l)	1,1,2-TCA (6 ug/l)	1,2-Dichloro-propane (10 ug/l)	MIBK (500 ug/l)	1,3-DCB (1 ug/l)	Arsenic (10 ug/l)	Lead (10 ug/l)
SW Peninsular Area (Soil AOCs 1, 2, 3)	14B	Upper	13.7	37.7	333												2.6	14	
		Lower	55.5	75.5													1.8 J	17.5	
	11B	Upper	5.6	20.6							700	33							
		Lower	24.6	39.6	1,060						2,100	68							
	15B	Upper	11.8	31.8	564	3,190	1,570	290	1,941									51.5	
		Mid	35.8	55.8						8.6			77					15.2	
		Lower	61.3	76.3						35			40						
	16B	Upper	10.2	24.2	1,270	3,920		710	4,400					64				32.8	
		Mid	30.2	50.2						46									
		Lower	56.2	76.2						45					20				
Bedrock Trough Area	17B	Upper	26.0	50.0	4,580					11,000									
		Lower	56.0	76.0	2,580					4,500									
	18B	Upper	27.1	47.1	2,460					5,000	53							121	
		Lower	53.1	73.1	8,840					24,000	170							66	
	MW-22-OB	Overburden	22.0	32.0	2,250					5,100									
	MW-22DOB	Overburden	48.0	58.0	100,000					300,000									
	MW-22B	Upper	73.5	93.5	45,300					130,000	280							78.4	
		Lower	102.5	122.5	31,500					67,000	55		48					90.3	
	MW-25B	Upper	56.0	70.0						100									15.1
		Mid	76.0	87.0						4.8									
		Lower	95.0	125.0						5.8									
	MW-26DB	Upper	127.5	142.5	3,670					7,100								32.8	61.4
		Lower	147.5	167.5	7,440					16,000								11.4	
	MW-27B	Upper	85.0	112.0	1,650					1,600						760		50.8	
		Lower	124.2	149.2	1,060					1,300						740		37	
Parcel 3B	MW-23B	Upper	60.0	83.9															46.5
		Mid	91.0	106.0															
		Lower	115.0	130.0															
	MW-24B	Upper	30.0	67.8															
		Mid	74.0	94.0															
		Lower	140.0	150.0															
	19B	Upper	10.0	24.3														17	86
		Mid	30.5	50.5														17	
		Lower	54.0	74.0															
	MW-28B	Upper	70.0	88.5															
		Mid	96.0	123.0															
		Lower	133.0	150.0														12.7	

Analyte Suite
- VPH & Petroleum VOCs
- CVOCs
- Metals

VPH = Volatile Petroleum Hydrocarbons

Magnitude of Exceedance (Relative to the Maine CDC MEGs for drinking water dated August 5, 2010)
- Low: <10 times the regulatory limit
- Medium: 10 to <100 times the regulatory limit
- High: 100 to <1,000 times the regulatory limit
- Very High: 1,000 to >10,000 times the regulatory limit

Note: DRO and GRO standards superseded by EPH and VPH standards effective December 1, 2009.



ENVIRON

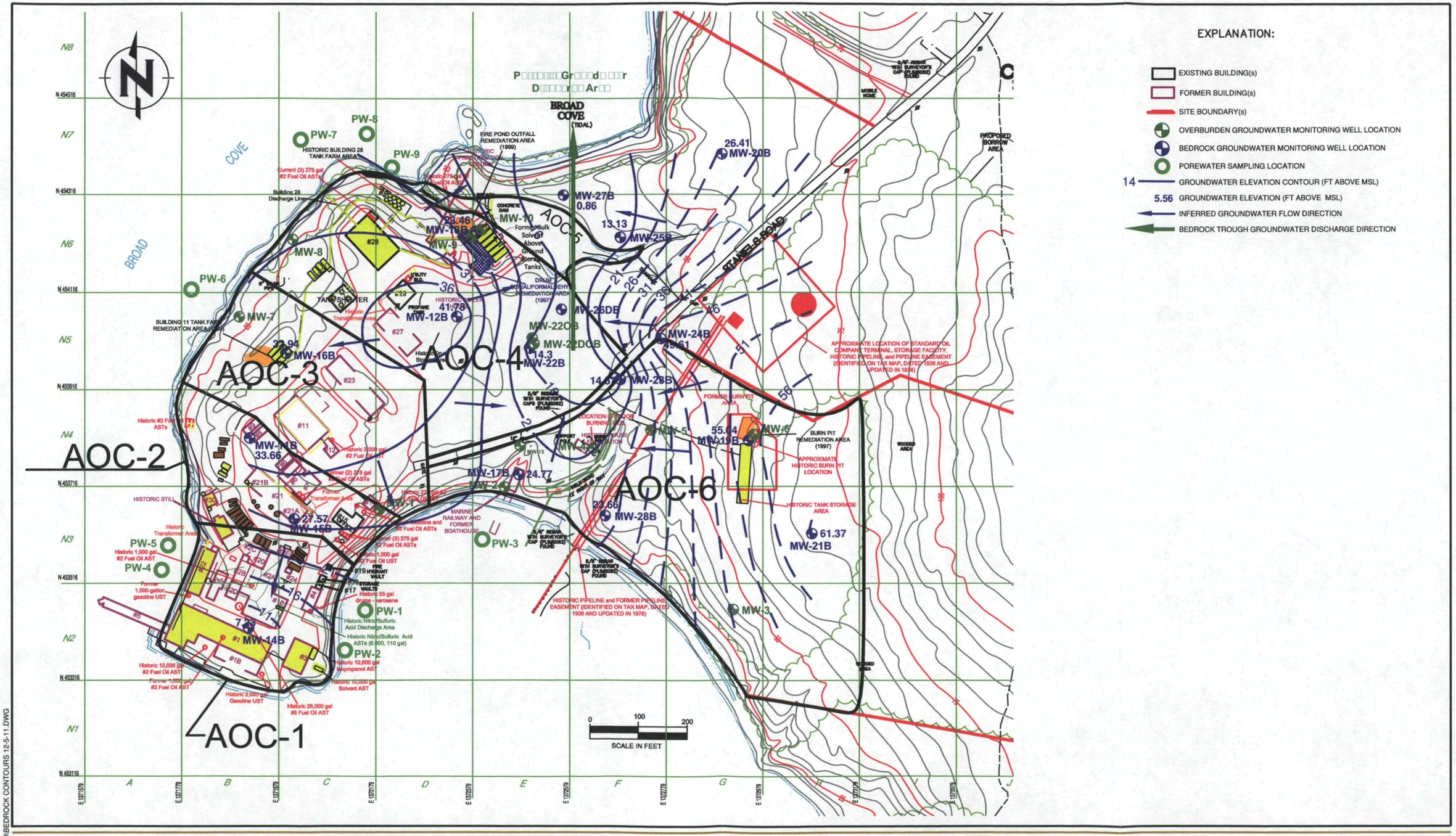
DRAFTED BY: \GMILES | DATE: 1/18/2011

C:\PROJECTS\08-25278F\SITE PLAN.DWG

Site Plan and Potential Source Areas of Concern

BASF Facility
30 Staniels Road
Eastport, Maine

Figure 1



ENVIRON

DRAFTED BY: \GMILES

DATE: 3/17/2012

C:\PROJECTS\08-23887D\BEDROCK CONTOURS 12-5-11.DWG

Bedrock Groundwater Elevations 12-5-11

BASF Facility
30 Staniels Road
Eastport, Maine

Figure
4-4